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OM protein - protein search, using sw model

Run on: November 2, 2004, 13:19:25 ; Search time 38 Seconds
(without alignments)
82.025 Million cell updates/sec

Title: US-09-107-979-4
Perfect score: 277
Sequence: 1 HFPCRDKDLAYCLNDGECF.....SHKHCRCKEGYGVRCDDQL 47

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 478139 seqs, 56318000 residues

Total number of hits satisfying chosen parameters: 478139

Minimum DB seq length: 0
Maximum DB seq length: 2000000000
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Issued Patents AA:*
1: /cgn2_6/prodata/1/iaa/5A_COMB.pep.*
2: /cgn2_6/prodata/1/iaa/5B_COMB.pep.*
3: /cgn2_6/prodata/1/iaa/6A_COMB.pep.*
4: /cgn2_6/prodata/1/iaa/6B_COMB.pep.*
5: /cgn2_6/prodata/1/iaa/PCUTUS_COMB.pep.*
6: /cgn2_6/prodata/1/iaa/backfiles1.pep.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	277	100.0	47	3	US-08-899-437-4
2	277	100.0	47	3	US-08-899-437-8
3	277	100.0	47	3	US-09-126-121-4
4	277	100.0	47	3	US-09-126-121-8
5	277	100.0	48	4	US-09-553-769-6
6	277	100.0	157	4	US-09-097-681-2
7	277	100.0	360	3	US-08-899-437-7
8	277	100.0	360	3	US-09-126-121-7
9	277	100.0	362	3	US-08-899-437-3
10	277	100.0	362	3	US-09-126-121-3
11	277	100.0	696	3	US-08-899-437-23
12	277	100.0	696	3	US-09-126-121-23
13	277	100.0	713	3	US-08-899-437-2
14	277	100.0	713	3	US-09-126-121-2
15	277	100.0	720	3	US-08-899-437-6
16	277	100.0	720	3	US-09-126-121-6
17	277	100.0	720	4	US-09-097-681-22
18	116.5	42.1	52	1	US-08-417-640A-1
19	116.5	42.1	52	1	US-08-760-815-1
20	116.5	42.1	52	2	US-08-761-038-1
21	116.5	42.1	52	3	US-09-238-182-1
22	113.5	41.0	49	3	US-08-899-437-14
23	113.5	41.0	49	3	US-09-126-121-14
24	113.5	41.0	50	3	US-08-753-007A-12
25	113.5	41.0	50	3	US-09-398-496-12
26	113.5	41.0	52	1	US-08-417-640A-3
27	113.5	41.0	52	1	US-08-760-815-3

28 113.5 41.0 52 2 US-08-761-038-3 Sequence 3, Appli
29 113.5 41.0 53 4 US-09-097-681-17 Sequence 17, Appl
30 113.5 41.0 54 1 US-08-179-481-111 Sequence 111, Appl
31 113.5 41.0 63 3 US-08-341-018-62 Sequence 62, Appl
32 113.5 41.0 63 3 US-08-470-335-221 Sequence 221, Appl
33 113.5 41.0 63 3 US-08-470-335-221 Sequence 221, Appl
34 113.5 41.0 63 4 US-08-467-602-415 Sequence 415, Appl
35 113.5 41.0 63 4 US-08-411-295F-55 Sequence 55, Appl
36 113.5 41.0 63 4 US-08-411-295F-98 Sequence 98, Appl
37 113.5 41.0 65 4 US-08-411-295F-136 Sequence 136, Appl
38 113.5 41.0 66 1 US-07-847-743B-10 Sequence 10, Appl
39 113.5 41.0 66 2 US-08-456-201-10 Sequence 10, Appl
40 113.5 41.0 66 2 US-08-456-241-10 Sequence 2, Appli
41 113.5 41.0 66 3 US-09-020-880-2 Sequence 2, Appli
42 113.5 41.0 66 5 PCT-US92-04295A-10 Sequence 10, Appl
43 113.5 41.0 83 3 US-08-341-018-70 Sequence 70, Appl
44 113.5 41.0 83 3 US-08-470-335-225 Sequence 225, Appl
45 113.5 41.0 83 3 US-08-470-335-225

ALIGNMENTS

RESULT 1
US-08-899-437-4
; Sequence 4, Application US/08899437
; Patent No. 6121415
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
; NUMBER OF SEQUENCES: 23
; NUMBER OF INVENTION: Ligands and Uses Therefor
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: WinPatIn (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/899,437
; FILING DATE: 24-Jul-1997
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Conley, Deirdre L.
; REGISTRATION NUMBER: 36,487
; REFERENCE/DOCKET NUMBER: P1084R1
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650/225-2066
; TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 4:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 47 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
; FEATURE:
; NAME/KEY: NR3 EGF-like domain/amino acid seq.
; LOCATION: 1-47
; IDENTIFICATION METHOD:
; OTHER INFORMATION:
; US-08-899-437-4

Query Match 100.0%; Score 277; DB 3; Length 47;
Best Local Similarity 100.0%; Pred. No. 2.9e-26;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYGVRCDDQL 47
|||||

Db 1 HFPCRDLDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 47

RESULT 2

US-08-899-437-8
; Sequence 8, Application US/08899437
; Patent No. 6121415
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
; TITLE OF INVENTION: Ligands and Uses Therefor
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080

COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk

COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WinPatIn (Genentech)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/899,437
FILING DATE: 24-Jul-1997

CLASSIFICATION: 435

ATTORNEY/AGENT INFORMATION:
NAME: Conley, Deirdre L.
REGISTRATION NUMBER: 36,487
REFERENCE/DOCKET NUMBER: P1084R1
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650/225-2066
TELEFAX: 650/952-9881

INFORMATION FOR SEQ ID NO: 8:

SEQUENCE CHARACTERISTICS:
LENGTH: 47 amino acids
TYPE: Amino Acid
TOPOLOGY: Linear

FEATURE:
NAME/KEY: NRG3 EGF-like domain/amino acid seq.

LOCATION: 1-47

IDENTIFICATION METHOD:

OTHER INFORMATION:

US-08-899-437-8

Query Match 100.0%; Score 277; DB 3; Length 47;
Best Local Similarity 100.0%; Pred. No. 2.9e-26;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFPCRDLDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 47

Db 1 HFPCRDLDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 47

RESULT 3

US-09-126-121-4
; Sequence 4, Application US/09126121
; Patent No. 6252051
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
; TITLE OF INVENTION: Ligands and Uses Therefor
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080

COMPUTER READABLE FORM:

MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WinPatIn (Genentech)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/126,121
FILING DATE: 30-Jul-1998

CLASSIFICATION:

ATTORNEY/AGENT INFORMATION:
NAME: Conley, Deirdre L.
REGISTRATION NUMBER: 36,487
REFERENCE/DOCKET NUMBER: P1084R1D1
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650/225-2066
TELEFAX: 650/952-9881

INFORMATION FOR SEQ ID NO: 4:

SEQUENCE CHARACTERISTICS:
LENGTH: 47 amino acids
TYPE: Amino Acid
TOPOLOGY: Linear

FEATURE:

NAME/KEY: NRG3 EGF-like domain/amino acid seq.
LOCATION: 1-47
IDENTIFICATION METHOD:

OTHER INFORMATION:

US-09-126-121-4

Query Match 100.0%; Score 277; DB 3; Length 47;
Best Local Similarity 100.0%; Pred. No. 2.9e-26;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFPCRDLDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 47

Db 1 HFPCRDLDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 47

RESULT 4

US-09-126-121-8
; Sequence 8, Application US/09126121
; Patent No. 6252051
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
; TITLE OF INVENTION: Ligands and Uses Therefor
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080

COMPUTER READABLE FORM:

MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WinPatIn (Genentech)

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/09/126,121

FILING DATE: 30-Jul-1998

CLASSIFICATION:

ATTORNEY/AGENT INFORMATION:
NAME: Conley, Deirdre L.
REGISTRATION NUMBER: 36,487
REFERENCE/DOCKET NUMBER: P1084R1D1
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650/225-2066
TELEFAX: 650/952-9881

INFORMATION FOR SEQ ID NO: 8:

SEQUENCE CHARACTERISTICS:
LENGTH: 47 amino acids
TYPE: Amino Acid
TOPOLOGY: Linear

Query Match	100.0%	Score 277;	DB 3;	Length 47;
Best Local Similarity	100.0%	Pred. No. 2.9e-26;		
Matches 47;	Conservative 0;	Mismatches 0;	Indels 0;	Gaps 0;
NAME/KEY: NRG3 EGF-like domain/amino acid seq.				
LOCATION: 1-47				
IDENTIFICATION METHOD:				
OTHER INFORMATION:				
US-09-126-121-8				
Query Match	100.0%	Score 277;	DB 3;	Length 47;
Best Local Similarity	100.0%	Pred. No. 2.9e-26;		
Matches 47;	Conservative 0;	Mismatches 0;	Indels 0;	Gaps 0;
NAME/KEY: NRG3 EGF-like domain/amino acid seq.				
LOCATION: 1-47				
IDENTIFICATION METHOD:				
OTHER INFORMATION:				
US-09-126-121-8				
Query Match	100.0%	Score 277;	DB 3;	Length 47;
Best Local Similarity	100.0%	Pred. No. 2.9e-26;		
Matches 47;	Conservative 0;	Mismatches 0;	Indels 0;	Gaps 0;
NAME/KEY: NRG3 EGF-like domain/amino acid seq.				
LOCATION: 1-47				
IDENTIFICATION METHOD:				
OTHER INFORMATION:				
US-09-126-121-8				
Query Match	100.0%	Score 277;	DB 3;	Length 47;
Best Local Similarity	100.0%	Pred. No. 2.9e-26;		
Matches 47;	Conservative 0;	Mismatches 0;	Indels 0;	Gaps 0;
NAME/KEY: NRG3 EGF-like domain/amino acid seq.				
LOCATION: 1-47				
IDENTIFICATION METHOD:				
OTHER INFORMATION:				
US-09-126-121-8				
Query Match	100.0%	Score 277;	DB 3;	Length 47;
Best Local Similarity	100.0%	Pred. No. 2.9e-26;		
Matches 47;	Conservative 0;	Mismatches 0;	Indels 0;	Gaps 0;
NAME/KEY: NRG3 EGF-like domain/amino acid seq.				
LOCATION: 1-47				
IDENTIFICATION METHOD:				
OTHER INFORMATION:				
US-09-126-121-8				
Query Match	100.0%	Score 277;	DB 3;	Length 47;
Best Local Similarity	100.0%	Pred. No. 2.9e-26;		
Matches 47;	Conservative 0;	Mismatches 0;	Indels 0;	Gaps 0;
NAME/KEY: NRG3 EGF-like domain/amino acid seq.				
LOCATION: 1-47				
IDENTIFICATION METHOD:				
OTHER INFORMATION:				
US-09-126-121-8				
Query Match	100.0%	Score 277;	DB 3;	Length 47;
Best Local Similarity	100.0%	Pred. No. 2.9e-26;		
Matches 47;	Conservative 0;	Mismatches 0;	Indels 0;	Gaps 0;
NAME/KEY: NRG3 EGF-like domain/amino acid seq.				
LOCATION: 1-47				
IDENTIFICATION METHOD:				
OTHER INFORMATION:				
US-09-126-121-8				
Query Match	100.0%	Score 277;	DB 3;	Length 47;
Best Local Similarity	100.0%	Pred. No. 2.9e-26;		
Matches 47;	Conservative 0;	Mismatches 0;	Indels 0;	Gaps 0;
NAME/KEY: NRG3 EGF-like domain/amino acid seq.				
LOCATION: 1-47				
IDENTIFICATION METHOD:				
OTHER INFORMATION:				
US-09-126-121-8				
Query Match	100.0%	Score 277;	DB 3;	Length 47;
Best Local Similarity	100.0%	Pred. No. 2.9e-26;		
Matches 47;	Conservative 0;	Mismatches 0;	Indels 0;	Gaps 0;
NAME/KEY: NRG3 EGF-like domain/amino acid seq.				
LOCATION: 1-47				
IDENTIFICATION METHOD:				
OTHER INFORMATION:				
US-09-126-121-8				
Query Match	100.0%	Score 277;	DB 3;	Length 47;
Best Local Similarity	100.0%	Pred. No. 2.9e-26;		
Matches 47;	Conservative 0;	Mismatches 0;	Indels 0;	Gaps 0;
NAME/KEY: NRG3 EGF-like domain/amino acid seq.				
LOCATION: 1-47				
IDENTIFICATION METHOD:				
OTHER INFORMATION:				
US-09-126-121-8				
Query Match	100.0%	Score 277;	DB 3;	Length 47;
Best Local Similarity	100.0%	Pred. No. 2.9e-26;		
Matches 47;	Conservative 0;	Mismatches 0;	Indels 0;	Gaps 0;
NAME/KEY: NRG3 EGF-like domain/amino acid seq.				
LOCATION: 1-47				
IDENTIFICATION METHOD:				
OTHER INFORMATION:				
US-09-126				

QY 1 HFPCRDKDLAYCLNDGECFVETLTGSHKHCRCKEGYQGVRCDOFL 47
Db 286 HFPCRDKDLAYCLNDGECFVETLTGSHKHCRCKEGYQGVRCDOFL 332

RESULT 8

US-09-126-121-7
; Sequence 7, Application US/09126121
; Patent No. 6252051
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
; TITLE OF INVENTION: Ligands and Uses Therefor
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: WinPatin (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/126,121
; FILING DATE: 30-Jul-1998
; CLASSIFICATION:
; ATTORNEY/AGENT INFORMATION:
; NAME: Conley, Deirdre L.
; REGISTRATION NUMBER: 36,487
; REFERENCE/DOCKET NUMBER: P1084R1D1
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650/225-2066
; TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 7:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 360 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
; FEATURE:
; NAME/KEY: hNRG3 extracellular domain/Amino AcidSeq
; LOCATION: 1-360
; IDENTIFICATION METHOD:
; OTHER INFORMATION:
US-09-126-121-7

Query Match 100.0%; Score 277; DB 3; Length 360;
Best Local Similarity 100.0%; Pred. No. 2.3e-25;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFPCRDKDLAYCLNDGECFVETLTGSHKHCRCKEGYQGVRCDOFL 47
Db 286 HFPCRDKDLAYCLNDGECFVETLTGSHKHCRCKEGYQGVRCDOFL 332

RESULT 9

US-08-899-437-3
; Sequence 3, Application US/08899437
; Patent No. 6121415
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
; TITLE OF INVENTION: Ligands and Uses Therefor
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California

; COUNTRY: USA
; ZIP: 94080
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: WinPatin (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/899,437
; FILING DATE: 24-Jul-1997
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Conley, Deirdre L.
; REGISTRATION NUMBER: 36,487
; REFERENCE/DOCKET NUMBER: P1084R1
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650/225-2066
; TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 3:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 362 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
; FEATURE:
; NAME/KEY: mNRG3 extracellular domain/Amino acid seq
; LOCATION: 1-362
; IDENTIFICATION METHOD:
; OTHER INFORMATION:
US-08-899-437-3

Query Match 100.0%; Score 277; DB 3; Length 362;
Best Local Similarity 100.0%; Pred. No. 2.3e-25;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFPCRDKDLAYCLNDGECFVETLTGSHKHCRCKEGYQGVRCDOFL 47
Db 288 HFPCRDKDLAYCLNDGECFVETLTGSHKHCRCKEGYQGVRCDOFL 334

RESULT 10

US-09-126-121-3
; Sequence 3, Application US/09126121
; Patent No. 6252051
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
; TITLE OF INVENTION: Ligands and Uses Therefor
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080

COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: WinPatin (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/126,121
; FILING DATE: 30-Jul-1998
; CLASSIFICATION:
; ATTORNEY/AGENT INFORMATION:
; NAME: Conley, Deirdre L.
; REGISTRATION NUMBER: 36,487
; REFERENCE/DOCKET NUMBER: P1084R1D1
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650/225-2066
; TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 3:
; SEQUENCE CHARACTERISTICS:

US-09-126-121-3

; LENGTH: 362 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
; FEATURE:

; NAME/KEY: mNRG3 extracellular domainAmino acid seq

; LOCATION: 1-362

; IDENTIFICATION METHOD:

; OTHER INFORMATION:

US-09-126-121-3

Query Match 100.0%; Score 277; DB 3; Length 362;
Best Local Similarity 100.0%; Pred. No. 2.3e-25;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFKPCRDKDLAYCLNDGECFVETLTGSHKHCRCKEGYQGVRCDOFL 47
|||||
Db 286 HFKPCRDKDLAYCLNDGECFVETLTGSHKHCRCKEGYQGVRCDOFL 334
|||||

RESULT 11

US-08-899-437-23

; Sequence 23, Application US/08899437

; Patent No. 6121415

; GENERAL INFORMATION:

; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao

; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related

; TITLE OF INVENTION: Ligands and Uses Therefor

; NUMBER OF SEQUENCES: 23

; CORRESPONDENCE ADDRESS:

; ADDRESSEE: Genentech, Inc.

; STREET: 1 DNA Way

; CITY: South San Francisco

; STATE: California

; COUNTRY: USA

; ZIP: 94080

; COMPUTER READABLE FORM:

; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk

; COMPUTER: IBM PC compatible

; OPERATING SYSTEM: PC-DOS/MS-DOS

; SOFTWARE: WinPatin (Genentech)

; CURRENT APPLICATION DATA:

; APPLICATION NUMBER: US/08/899,437

; FILING DATE: 24-Jul-1997

; CLASSIFICATION: 435

; ATTORNEY/AGENT INFORMATION:

; NAME: Conley, Deirdre L.

; REGISTRATION NUMBER: 36,487

; REFERENCE/DOCKET NUMBER: P1084R1

; TELECOMMUNICATION INFORMATION:

; TELEPHONE: 650/225-2066

; TELEFAX: 650/952-9881

; INFORMATION FOR SEQ ID NO: 23:

; SEQUENCE CHARACTERISTICS:

; LENGTH: 696 amino acids

; TYPE: Amino Acid

; TOPOLOGY: Linear

; FEATURE:

; NAME/KEY: Human NRG3B2

; LOCATION: 1-696

; IDENTIFICATION METHOD:

; OTHER INFORMATION:

US-08-899-437-23

Query Match 100.0%; Score 277; DB 3; Length 696;
Best Local Similarity 100.0%; Pred. No. 4.5e-25;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFKPCRDKDLAYCLNDGECFVETLTGSHKHCRCKEGYQGVRCDOFL 47
|||||
Db 286 HFKPCRDKDLAYCLNDGECFVETLTGSHKHCRCKEGYQGVRCDOFL 332
|||||

RESULT 12

US-09-126-121-23

; Sequence 23, Application US/09126121

; Patent No. 6252051

; GENERAL INFORMATION:

; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao

; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related

; TITLE OF INVENTION: Ligands and Uses Therefor

; NUMBER OF SEQUENCES: 23

; CORRESPONDENCE ADDRESS:

; ADDRESSEE: Genentech, Inc.

; STREET: 1 DNA Way

; CITY: South San Francisco

; STATE: California

; COUNTRY: USA

; ZIP: 94080

; COMPUTER READABLE FORM:

; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk

; COMPUTER: IBM PC compatible

; OPERATING SYSTEM: PC-DOS/MS-DOS

; SOFTWARE: WinPatin (Genentech)

; CURRENT APPLICATION DATA:

; APPLICATION NUMBER: US/09/126,121

; FILING DATE: 30-Jul-1998

; CLASSIFICATION:

; ATTORNEY/AGENT INFORMATION:

; NAME: Conley, Deirdre L.

; REGISTRATION NUMBER: 36,487

; REFERENCE/DOCKET NUMBER: P1084R1D1

; TELECOMMUNICATION INFORMATION:

; TELEPHONE: 650/225-2066

; TELEFAX: 650/952-9881

; INFORMATION FOR SEQ ID NO: 23:

; SEQUENCE CHARACTERISTICS:

; LENGTH: 696 amino acids

; TYPE: Amino Acid

; TOPOLOGY: Linear

; FEATURE:

; NAME/KEY: Human NRG3B2

; LOCATION: 1-696

; IDENTIFICATION METHOD:

; OTHER INFORMATION:

US-09-126-121-23

Query Match 100.0%; Score 277; DB 3; Length 696;

Best Local Similarity 100.0%; Pred. No. 4.5e-25;

Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFKPCRDKDLAYCLNDGECFVETLTGSHKHCRCKEGYQGVRCDOFL 47
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Db 286 HFKPCRDKDLAYCLNDGECFVETLTGSHKHCRCKEGYQGVRCDOFL 332
|||||

RESULT 13

US-08-899-437-2

; Sequence 2, Application US/08899437

; Patent No. 6121415

; GENERAL INFORMATION:

; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao

; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related

; TITLE OF INVENTION: Ligands and Uses Therefor

; NUMBER OF SEQUENCES: 23

; CORRESPONDENCE ADDRESS:

; ADDRESSEE: Genentech, Inc.

; STREET: 1 DNA Way

; CITY: South San Francisco

; STATE: California

; COUNTRY: USA

; ZIP: 94080

; COMPUTER READABLE FORM:

; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk

; COMPUTER: IBM PC compatible

; OPERATING SYSTEM: PC-DOS/MS-DOS

; SOFTWARE: WinPatin (Genentech)

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;
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/899,437
; FILING DATE: 24-Jul-1997
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Conley, Deirdre L.
; REGISTRATION NUMBER: 36,487
; REFERENCE/DOCKET NUMBER: P1084R1
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650/225-2066
; TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 2:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 713 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
;
; FEATURE:
; NAME/KEY: Mouse NRG3 (mNRG3)/amino acid seq.
; LOCATION: 1-713
; IDENTIFICATION METHOD:
; OTHER INFORMATION:
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; US-08-899-437-2
;
; Query Match 100.0%; Score 277; DB 3; Length 713;
; Best Local Similarity 100.0%; Pred. No. 4.7e-25;
; Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
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; Qy 1 HFKECRDKDLAYCLNDGECFVIETLTGSHKRCCKEGYQGVRCDOFL 47
; Db 288 HFKECRDKDLAYCLNDGECFVIETLTGSHKRCCKEGYQGVRCDOFL 334
;
; RESULT 14
; US-09-126-121-2
; Sequence 2, Application US/09126121
; Patent No. 6252051
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
; TITLE OF INVENTION: Ligands and Uses Therefor
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: WinPatIn (Genentech)
; CURRENT APPLICATION DATA:
; FILING DATE: 30-Jul-1998
; CLASSIFICATION:
; ATTORNEY/AGENT INFORMATION:
; NAME: Conley, Deirdre L.
; REGISTRATION NUMBER: 36,487
; REFERENCE/DOCKET NUMBER: P1084R1D1
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650/225-2066
; TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 2:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 713 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
;
; FEATURE:
; NAME/KEY: Mouse NRG3 (mNRG3)/amino acid seq.
; LOCATION: 1-713
; IDENTIFICATION METHOD:
; OTHER INFORMATION:
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; US-08-899-437-2
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; OTHER INFORMATION:
; US-09-126-121-2
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; Query Match 100.0%; Score 277; DB 3; Length 713;
; Best Local Similarity 100.0%; Pred. No. 4.7e-25;
; Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
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; Qy 1 HFKECRDKDLAYCLNDGECFVIETLTGSHKRCCKEGYQGVRCDOFL 47
; Db 288 HFKECRDKDLAYCLNDGECFVIETLTGSHKRCCKEGYQGVRCDOFL 334
;
; RESULT 15
; US-08-899-437-6
; Sequence 6, Application US/08899437
; Patent No. 6121415
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
; TITLE OF INVENTION: Ligands and Uses Therefor
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: WinPatIn (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/899,437
; FILING DATE: 24-Jul-1997
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Conley, Deirdre L.
; REGISTRATION NUMBER: 36,487
; REFERENCE/DOCKET NUMBER: P1084R1
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650/225-2066
; TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 6:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 720 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
;
; FEATURE:
; NAME/KEY: hNRG3B1 amino acid sequence
; LOCATION: 1-720
; IDENTIFICATION METHOD:
; OTHER INFORMATION:
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; US-08-899-437-6
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; Query Match 100.0%; Score 277; DB 3; Length 720;
; Best Local Similarity 100.0%; Pred. No. 4.7e-25;
; Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
;
; Qy 1 HFKECRDKDLAYCLNDGECFVIETLTGSHKRCCKEGYQGVRCDOFL 47
; Db 286 HFKECRDKDLAYCLNDGECFVIETLTGSHKRCCKEGYQGVRCDOFL 332
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; Search completed: November 2, 2004, 13:29:06
; Job time : 39 secs
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GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: November 2, 2004, 13:37:16 ; Search time 38 Seconds
(without alignments)
82.025 Million cell updates/sec

Title: US-09-107-979-4
Perfect score: 47
Sequence: 1 HFKEPCRDKDAYCLNDGECF.....SHKHCRCKEGYQGVRCDOFL 47

Scoring table: OLIGO
Gapop 60.0 , Gapext 60.0

Searched: 478139 seqs, 66318000 residues

Word size: 0

Total number of hits satisfying chosen parameters: 478139

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Listing first 45 summaries

Database : Issued Patents AA:*

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- 2: /cgn2_6/ptodata/1/iaa/5B_COMB.pap:*
- 3: /cgn2_6/ptodata/1/iaa/6A_COMB.pap:*
- 4: /cgn2_6/ptodata/1/iaa/6B_COMB.pap:*
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- 6: /cgn2_6/ptodata/1/iaa/backfiles.pap:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	47	100.0	47	3	US-08-899-437-4
2	47	100.0	47	3	US-08-899-437-8
3	47	100.0	47	3	US-09-126-121-4
4	47	100.0	47	3	US-09-126-121-8
5	47	100.0	48	4	US-09-553-769-6
6	47	100.0	157	4	US-09-097-681-2
7	47	100.0	360	3	US-08-899-437-7
8	47	100.0	360	3	US-09-126-121-7
9	47	100.0	362	3	US-08-899-437-3
10	47	100.0	362	3	US-09-126-121-3
11	47	100.0	696	3	US-08-899-437-23
12	47	100.0	696	3	US-09-126-121-23
13	47	100.0	713	3	US-08-899-437-2
14	47	100.0	713	3	US-09-126-121-2
15	47	100.0	720	3	US-08-899-437-6
16	47	100.0	720	3	US-09-126-121-6
17	47	100.0	720	4	US-09-097-681-22
18	8	17.0	8	3	US-08-899-437-19
19	8	17.0	8	3	US-09-126-121-19
20	7	14.9	401	4	US-09-465-558-70
21	7	14.9	407	4	US-09-465-558-68
22	7	14.9	509	4	US-09-907-794A-315
23	7	14.9	509	4	US-09-905-125A-315
24	7	14.9	509	4	US-09-902-775A-315
25	7	14.9	509	4	US-09-906-700-315
26	7	14.9	509	4	US-09-903-603A-315
27	6	12.8	97	3	US-09-134-001C-4939

28 6 12.8 149 4 US-09-538-092-691 Sequence 691, App
29 6 12.8 221 4 US-09-270-767-42448 Sequence 42448, A
30 6 12.8 273 4 US-09-248-796A-20117 Sequence 20117, A
31 6 12.8 283 4 US-09-205-258-904 Sequence 904, App
32 6 12.8 344 4 US-09-198-452A-880 Sequence 880, App
33 6 12.8 370 3 US-09-134-001C-3403 Sequence 3403, App
34 6 12.8 370 4 US-09-710-279-696 Sequence 696, App
35 6 12.8 370 4 US-09-710-279-1328 Sequence 1328, App
36 6 12.8 418 4 US-09-252-991A-20665 Sequence 20665, A
37 6 12.8 427 4 US-09-134-000C-6117 Sequence 6117, App
38 6 12.8 615 4 US-09-107-532A-6507 Sequence 6507, App
39 6 12.8 700 4 US-09-489-039A-13463 Sequence 13463, A
40 6 12.8 770 4 US-09-543-681A-8009 Sequence 8009, App
41 6 12.8 813 4 US-09-328-352-7421 Sequence 7421, App
42 6 12.8 997 4 US-09-747-371-3 Sequence 3, Appli
43 6 12.8 1798 4 US-09-845-583A-8 Sequence 8, Appli
44 6 12.8 1798 4 US-09-561-709B-11 Sequence 11, Appl
45 6 12.8 1798 4 US-09-917-254-87 Sequence 87, Appl

ALIGNMENTS

RESULT 1
US-08-899-437-4
; Sequence 4, Application US/08899437
; Patent No. 6121415
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
; TITLE OF INVENTION: Ligands and Uses Therefor
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: WinPatIn (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/899,437
; FILING DATE: 24-Jul-1997
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Conley, Deirdre L.
; REGISTRATION NUMBER: 36,487
; REFERENCE/DOCKET NUMBER: P1084R1
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650/225-2066
; TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 4:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 47 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
; FEATURE:
; NAME/KEY: NR03 EGF-like domain/amino acid seq.
; LOCATION: 1-47
; IDENTIFICATION METHOD:
; OTHER INFORMATION:
US-08-899-437-4

Query Match 100.0%; Score 47; DB 3; Length 47;
Best Local Similarity 100.0%; Pred. No. 4,9e-44;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
Qy 1 HFKEPCRDKDAYCLNDGECFVIELTGTSHKHCRCKEGYQGVRCDOFL 47
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Db      1 HFKEPCDKLAYCLNDGECFVIETLTGSHKHCKRCKGKGQGVRCDOFL 47

RESULT 2
US-08-899-437-8
; Sequence 8, Application US/08899437
; Patent No. 6121415
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
; LIGANDS AND USES THEREFOR
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: WinPatIn (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/899,437
; FILING DATE: 24-Jul-1997
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Conley, Deirdre L.
; REGISTRATION NUMBER: 36,487
; REFERENCE/DOCKET NUMBER: P1084R1
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650/225-2066
; TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 8:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 47 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
; FEATURE:
; NAME/KEY: NRG3 EGF-like domain/amino acid seq.
; LOCATION: 1-47
; IDENTIFICATION METHOD:
; OTHER INFORMATION:
;
US-08-899-437-8
Query Match      100.0%; Score 47; DB 3; Length 47;
Best Local Similarity 100.0%; Pred. No. 4.9e-44;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy      1 HFKEPCDKLAYCLNDGECFVIETLTGSHKHCKRCKGKGQGVRCDOFL 47
Db      1 HFKEPCDKLAYCLNDGECFVIETLTGSHKHCKRCKGKGQGVRCDOFL 47

RESULT 3
US-09-126-121-4
; Sequence 4, Application US/09126121
; Patent No. 6252051
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
; LIGANDS AND USES THEREFOR
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: WinPatIn (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/126,121
; FILING DATE: 30-Jul-1998
; CLASSIFICATION:
; ATTORNEY/AGENT INFORMATION:
; NAME: Conley, Deirdre L.
; REGISTRATION NUMBER: 36,487
; REFERENCE/DOCKET NUMBER: P1084R1D1
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650/225-2066
; TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 8:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 47 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
; FEATURE:
; NAME/KEY: NRG3 EGF-like domain/amino acid seq.
; LOCATION: 1-47
; IDENTIFICATION METHOD:
; OTHER INFORMATION:
;
US-09-126-121-4
Query Match      100.0%; Score 47; DB 3; Length 47;
Best Local Similarity 100.0%; Pred. No. 4.9e-44;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy      1 HFKEPCDKLAYCLNDGECFVIETLTGSHKHCKRCKGKGQGVRCDOFL 47
Db      1 HFKEPCDKLAYCLNDGECFVIETLTGSHKHCKRCKGKGQGVRCDOFL 47

RESULT 4
US-09-126-121-8
; Sequence 8, Application US/09126121
; Patent No. 6252051
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
; LIGANDS AND USES THEREFOR
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: WinPatIn (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/126,121
; FILING DATE: 30-Jul-1998
; CLASSIFICATION:
; ATTORNEY/AGENT INFORMATION:
; NAME: Conley, Deirdre L.
; REGISTRATION NUMBER: 36,487
; REFERENCE/DOCKET NUMBER: P1084R1D1
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650/225-2066
; TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 8:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 47 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
; FEATURE:
; NAME/KEY: NRG3 EGF-like domain/amino acid seq.
; LOCATION: 1-47
; IDENTIFICATION METHOD:
; OTHER INFORMATION:
;
US-09-126-121-8
Query Match      100.0%; Score 47; DB 3; Length 47;
Best Local Similarity 100.0%; Pred. No. 4.9e-44;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy      1 HFKEPCDKLAYCLNDGECFVIETLTGSHKHCKRCKGKGQGVRCDOFL 47
Db      1 HFKEPCDKLAYCLNDGECFVIETLTGSHKHCKRCKGKGQGVRCDOFL 47
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Qy 1 HFXPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDFL 47
Db 286 HFXPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDFL 332

RESULT 8
US-09-126-121-7
; Sequence 7, Application US/09126121
; Patent No. 6252051
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: WinPatIn (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/126,121
; FILING DATE: 30-Jul-1998
; CLASSIFICATION:
; ATTORNEY/AGENT INFORMATION:
; NAME: Conley, Deirdre L.
; REGISTRATION NUMBER: 36,487
; REFERENCE/DOCKET NUMBER: P1084R1D1
; TELEPHONE: 650/225-2066
; TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 7:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 360 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
; FEATURE:
; NAME/KEY: hNRG3 extracellular domain/Amino AcidSeq
; LOCATION: 1-360
; IDENTIFICATION METHOD:
; OTHER INFORMATION:
; US-09-126-121-7

Query Match 100.0%; Score 47; DB 3; Length 360;
Best Local Similarity 100.0%; Pred. No. 3e-43;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HFXPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDFL 47
Db 286 HFXPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDFL 332

RESULT 9
US-08-899-437-3
; Sequence 3, Application US/08899437
; Patent No. 6121415
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
```

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; COUNTRY: USA
; ZIP: 94080
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: WinPatIn (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/899,437
; FILING DATE: 24-Jul-1997
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Conley, Deirdre L.
; REGISTRATION NUMBER: 36,487
; REFERENCE/DOCKET NUMBER: P1084R1
; TELEPHONE: 650/225-2066
; TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 3:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 362 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
; FEATURE:
; NAME/KEY: mNRG3 extracellular domain/Amino acid seq
; LOCATION: 1-362
; IDENTIFICATION METHOD:
; OTHER INFORMATION:
; US-08-899-437-3

Query Match 100.0%; Score 47; DB 3; Length 362;
Best Local Similarity 100.0%; Pred. No. 3e-43;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HFXPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDFL 47
Db 288 HFXPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDFL 334

RESULT 10
US-09-126-121-3
; Sequence 3, Application US/09126121
; Patent No. 6252051
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: WinPatIn (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/126,121
; FILING DATE: 30-Jul-1998
; CLASSIFICATION:
; ATTORNEY/AGENT INFORMATION:
; NAME: Conley, Deirdre L.
; REGISTRATION NUMBER: 36,487
; REFERENCE/DOCKET NUMBER: P1084R1D1
; TELEPHONE: 650/225-2066
; TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 3:
; SEQUENCE CHARACTERISTICS:
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/
/ LENGTH: 362 amino acids
/ TYPE: Amino Acid
/ TOPOLOGY: Linear
/
/ FEATURE:
/
/ NAME/KEY: mNRG3 extracellular domainAmino acid seq
/ LOCATION: 1-362
/ IDENTIFICATION METHOD:
/ OTHER INFORMATION:
/
US-09-126-121-3
    Query Match 100.0%; Score 47; DB 3; Length 362;
    Best Local Similarity 100.0%; Pred. No. 3e-43;
    Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCCKEGYQGVRCDOFL 47
Db 288 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCCKEGYQGVRCDOFL 334

RESULT 11
US-08-899-437-23
/ Sequence 23, Application US/08899437
/ Patent No. 6121415
/ GENERAL INFORMATION:
/ APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
/ TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
/ TITLE OF INVENTION: Ligands and Uses Therefor
/ NUMBER OF SEQUENCES: 23
/ CORRESPONDENCE ADDRESS:
/ ADDRESSEE: Genentech, Inc.
/ STREET: 1 DNA Way
/ CITY: South San Francisco
/ STATE: California
/ COUNTRY: USA
/ ZIP: 94080
/ COMPUTER READABLE FORM:
/ MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
/ OPERATING SYSTEM: PC-DOS/MS-DOS
/ SOFTWARE: WinPatin (Genentech)
/ CURRENT APPLICATION DATA:
/ APPLICATION NUMBER: US/08/899,437
/ FILING DATE: 24-Jul-1997
/ CLASSIFICATION: 435
/ ATTORNEY/AGENT INFORMATION:
/ NAME: Conley, Deirdre L.
/ REGISTRATION NUMBER: 36,487
/ REFERENCE/DOCKET NUMBER: P1084R1
/ TELECOMMUNICATION INFORMATION:
/ TELEPHONE: 650/225-2066
/ TELEFAX: 650/952-9881
/ INFORMATION FOR SEQ ID NO: 23:
/ SEQUENCE CHARACTERISTICS:
/ LENGTH: 362 amino acids
/ TYPE: Amino Acid
/ TOPOLOGY: Linear
/ FEATURE:
/ NAME/KEY: Human NRG3B2
/ LOCATION: 1-696
/ IDENTIFICATION METHOD:
/ OTHER INFORMATION:
/
US-08-899-437-23
    Query Match 100.0%; Score 47; DB 3; Length 696;
    Best Local Similarity 100.0%; Pred. No. 5.4e-43;
    Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCCKEGYQGVRCDOFL 47
Db 286 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCCKEGYQGVRCDOFL 332

RESULT 12
US-08-899-437-23
    Query Match 100.0%; Score 47; DB 3; Length 696;
    Best Local Similarity 100.0%; Pred. No. 5.4e-43;
    Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCCKEGYQGVRCDOFL 47
Db 286 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCCKEGYQGVRCDOFL 332
```

```
;
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/899,437
; FILING DATE: 24-Jul-1997
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Conley, Deirdre L.
; REGISTRATION NUMBER: 36,487
; REFERENCE/DOCKET NUMBER: P1084R1
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650/225-2066
; TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 2:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 713 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
; FEATURE:
; NAME/KEY: Mouse NRG3 (mNRG3)/amino acid seq.
; LOCATION: 1-713
; IDENTIFICATION METHOD:
; OTHER INFORMATION:
;
US-08-899-437-2

Query Match      100.0%; Score 47; DB 3; Length 713;
Best Local Similarity 100.0%; Pred. No. 5.5e-43;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 47
Db 288 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 334

RESULT 14
US-09-126-121-2
; Sequence 2, Application US/09126121
; Patent No. 6252051
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: WinPatIn (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/126,121
; FILING DATE: 30-Jul-1998
; CLASSIFICATION:
; ATTORNEY/AGENT INFORMATION:
; NAME: Conley, Deirdre L.
; REGISTRATION NUMBER: 36,487
; REFERENCE/DOCKET NUMBER: P1084R1D1
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650/225-2066
; TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 2:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 713 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
; FEATURE:
; NAME/KEY: Mouse NRG3 (mNRG3)/amino acid seq.
; LOCATION: 1-713
; IDENTIFICATION METHOD:
```

```
;
; OTHER INFORMATION:
;
US-09-126-121-2

Query Match      100.0%; Score 47; DB 3; Length 713;
Best Local Similarity 100.0%; Pred. No. 5.5e-43;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 47
Db 288 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 334

RESULT 15
US-08-899-437-6
; Sequence 6, Application US/08899437
; Patent No. 6121415
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: WinPatIn (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/899,437
; FILING DATE: 24-Jul-1997
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Conley, Deirdre L.
; REGISTRATION NUMBER: 36,487
; REFERENCE/DOCKET NUMBER: P1084R1
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650/225-2066
; TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 6:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 720 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
; FEATURE:
; NAME/KEY: hNRG3B1 amino acid sequence
; LOCATION: 1-720
; IDENTIFICATION METHOD:
; OTHER INFORMATION:
;
US-08-899-437-6

Query Match      100.0%; Score 47; DB 3; Length 720;
Best Local Similarity 100.0%; Pred. No. 5.5e-43;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 47
Db 286 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 332

Search completed: November 2, 2004, 13:46:56
Job time : 39 secs
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GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: November 2, 2004, 13:10:39 ; Search time 157 Seconds
(without alignments)
107.390 Million cell updates/sec

Title: US-09-107-979-4

Perfect score: 277
Sequence: 1 HFPCRDKLAYCLNDGECF.....SHKCRCKEKGVGQVRCQFL 47

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 2002273 seqs, 358729299 residues

Total number of hits satisfying chosen parameters: 2002273

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : A Geneseq 23Sep04:*

1: geneseqp1980s:*
2: geneseqp1990s:*
3: geneseqp2000s:*
4: geneseqp2001s:*
5: geneseqp2002s:*
6: geneseqp2003as:*
7: geneseqp2003bs:*
8: geneseqp2004s:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	277	100.0	47	2 AAW97622	Aaw97622 Human neu
2	277	100.0	48	5 AAG66046	Aag66046 Mouse NRG
3	277	100.0	52	6 AAE36807	Aae36807 Human neu
4	277	100.0	157	2 AAY05451	Aay05451 Human her
5	277	100.0	157	8 ADN48870	Adn48870 Human her
6	277	100.0	360	2 AAW97621	Aaw97621 Human neu
7	277	100.0	362	2 AAW97620	Aaw97620 Mouse neu
8	277	100.0	502	5 ABB08776	Abb08776 Human neu
9	277	100.0	696	2 AAW97619	Aaw97619 Human neu
10	277	100.0	696	5 ABB32080	Abb32080 Novel hum
11	277	100.0	713	2 AAW97617	Aaw97617 Mouse neu
12	277	100.0	713	5 ABB32061	Abb32061 Mouse nov
13	277	100.0	720	2 AAW97618	Aaw97618 Human neu
14	277	100.0	720	2 AAY05452	Aay05452 Human her
15	277	100.0	720	5 ABB32065	Abb32065 Human nov
16	277	100.0	720	8 ADN48890	Adn48890 Human her
17	116.5	42.1	52	2 AAW05182	Aaw05182 Neu diffe
18	116.5	42.1	52	3 AAY69983	Aay69983 NDF/heretg
19	116.5	42.1	52	3 AAB12602	Aab12602 Human NDF
20	113.5	41.0	52	2 AAW05184	Aaw05184 Neu diffe
21	113.5	41.0	53	6 AAE36803	Aae36803 Human neu
22	113.5	41.0	53	8 ADN48885	Adn48885 Human her
23	113.5	41.0	63	2 AAR55659	Aar55659 EGFL2. 3/
24	113.5	41.0	63	2 AAR46918	Aar46918 EGFL2. 3/
25	113.5	41.0	63	2 AAR67250	Aar67250 Human epi

26	113.5	41.0	63	2 AAR96076	Aar96076 Epidermal
27	113.5	41.0	63	2 AAW09363	Aaw09363 EGFL2. 8/
28	113.5	41.0	63	2 AAR87461	Aar87461 Epidermal
29	113.5	41.0	66	3 AAB36702	Aab36702 EGF-like
30	113.5	41.0	83	2 AAR55663	Aar55663 EGFL6. 3/
31	113.5	41.0	83	2 AAR46922	Aar46922 EGFL6. 3/
32	113.5	41.0	83	2 AAR67254	Aar67254 Human epi
33	113.5	41.0	83	2 AAR96080	Aar96080 Epidermal
34	113.5	41.0	83	2 AAW09367	Aaw09367 EGFL6. 8/
35	113.5	41.0	83	2 AAR87465	Aar87465 Epidermal
36	113.5	41.0	88	2 AAR55662	Aar55662 EGFL5. 3/
37	113.5	41.0	88	2 AAR46921	Aar46921 EGFL5. 3/
38	113.5	41.0	88	2 AAR67253	Aar67253 Human epi
39	113.5	41.0	88	2 AAR96079	Aar96079 Epidermal
40	113.5	41.0	88	2 AAW09366	Aaw09366 EGFL5. 8/
41	113.5	41.0	88	2 AAR87464	Aar87464 Epidermal
42	113.5	41.0	99	5 ABJ00043	Abj00043 Human neu
43	113.5	41.0	99	5 ABJ00081	Abj00081 Human neu
44	113.5	41.0	99	8 ADH77520	Adh77520 Human neu
45	113.5	41.0	101	4 AAG67933	Aag67933 Human NRG

ALIGNMENTS

RESULT 1
AAW97622
ID AAW97622 standard; protein; 47 AA.
XX
AC AAW97622;
XX
DT 10-MAY-1999 (first entry)
XX
DE Human neuregulin related ligand NRG3 EGF-like domain.
XX
KW Neuregulin related ligand; NRG3; hNRG3B1; human; ErbB4 receptor;
KW signal transduction; nervous system disorder; neurodegeneration;
KW neuropathy; therapy; diagnosis; epidermal growth factor; EGF;
KW immunoadhesin.
XX
OS Homo sapiens.
XX
PN WO9902681-A1.
XX
PD 21-JAN-1999.
XX
PF 30-JUN-1998; 98WO-US013411.
XX
PR 09-JUL-1997; 97US-0052019P.
XX
PR 24-JUL-1997; 97US-00899437.
XX
PA (GETH) GENENTECH INC.
XX
PI Godowski PJ, Mark MR, Zhang D;
XX
DR WPI, 1999-120882/10.
XX
PT New isolated neuregulin related ligand-3 - used to develop products for
PT treating nervous system disorders, e.g. stroke, ischaemia, infection,
PT malignancy, Alzheimer's disease or Down's syndrome.
XX
PS Claim 30; Page 64; 101pp; English.
XX
CC This is the epidermal growth factor (EGF)-like domain of human neuregulin
CC related ligand NRG3 (see also AAW97618), a novel member of the EGF-like
CC family of protein ligands that binds to the ErbB4 receptor and activates
CC ErbB4 receptor tyrosine phosphorylation. The EGF-1 like domain of NRG3 is
CC distinct from the EGF-like domains of NRG1 and NRH2. The invention
CC provides human and murine polypeptides (see also AAW97617) that have at
CC least 75% homology to the NRG3 EGF-like domain, as well as expression
CC vectors, host cells and methods for the recombinant production of novel
CC NRG3s. The NRG3 polypeptides and polynucleotides can be used to
CC enhance the survival, proliferation or differentiation of cells having

CC the ErbB4 receptor in vivo and in vitro. They can be used to prevent or
 CC treat damage to a nerve or damage to other NRG3-expressing or NRG3-
 CC responsive cells, e.g. brain, heart, or kidney cells. In particular, they
 CC can be used to treat diseases which involve neural cell growth such as
 CC demyelination, or damage or loss of glial cells (e.g. multiple
 CC sclerosis). They can be used to treat patients whose nervous system has
 CC been damaged by e.g. trauma, surgery, stroke, ischaemia, infection,
 CC metabolic disease, nutritional deficiency, malignancy, or toxic agents.
 CC NRG3 can also be used to treat motor neuron disorders such as amyotrophic
 CC lateral sclerosis (Lou Gehrig's disease), Bell's palsy, conditions
 CC involving spinal muscular atrophy or paralysis, neurodegenerative
 CC disorders such as Alzheimer's disease, Parkinson's disease, epilepsy,
 CC multiple sclerosis, Huntington's chorea, Down's syndrome, nerve deafness,
 CC and Meniere's disease. They can also be used to treat neuropathies
 CC associated with systemic disease including Charcot-Marie-Tooth disease,
 CC hereditary neuropathies including Charcot-Marie-Tooth disease, Refsum's
 CC disease, abetalipoproteinemia, Tangier disease, Krabbe's disease,
 CC metachromatic leukodystrophy, Fabry's disease and Dejerine-Sottas
 CC syndrome, to treat disease of skeletal muscle of smooth muscle, such as
 CC muscular dystrophy or diseases caused by skeletal or smooth muscle
 CC wasting. The products can also be used for detection, diagnosis, for the
 CC production of transgenic or knockout animals or for drug screening. A
 CC claimed immunoadhesin comprises the human NRG3 EGF-like domain fused to
 CC an immunoglobulin sequence

XX Sequence 47 AA;

Query Match 100.0%; Score 277; DB 2; Length 47;
 Best Local Similarity 100.0%; Pred. No. 7.1e-21;
 Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDFL 47
 |||||
 Db 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDFL 47

RESULT 2

AAAG66046
 ID AAG66046 standard; peptide; 48 AA.

XX AAG66046;

DT 27-FEB-2002 (first entry)

XX Mouse NRG-3 EGF-like motif sequence.

DE ErbB-4; neuregulin-4; NRG-4; pro-NRG-4; neuroprotective; vulnary;
 KW cerebroprotective; vasotropic; antiparkinsonian; anticonvulsant;
 KW cytosstatic; nootropic; EGF; NRG-3.

XX Mus musculus.

OS WO200181540-A2.

XX 01-NOV-2001.

XX 20-APR-2001; 2001WO-IL000371.

XX 21-APR-2000; 2000US-00553769.

XX (YEDA) YEDA RES & DEV CO LTD.

XX Harari D, Yarden Y;

XX WPI; 2002-041398/05.

XX Novel ErbB-4 ligand, referred as neuregulin (NRG)-4 and polynucleotide
 PT sequences encoding NRG-4, useful for upregulating or downregulating ErbB-
 PT 4 receptor activity to treat Alzheimer's disease, stroke, gastric cancer.

XX Disclosure; Fig 1c; 153pp; English.

XX The invention relates to a novel ErbB-4 ligand, neuregulin-4 (NRG-4). NRG

CC -4 binds to mammalian ErbB-4 receptor and can be expressed by standard
 CC recombinant methodology. Pharmaceutical compositions comprising NRG-4 are
 CC useful for regulating an endogenous protein affecting ErbB-4 receptor
 CC activity in vivo. They are also useful for treating or preventing a
 CC disease condition or syndrome associated with dysregulation of an
 CC endogenous protein affecting ErbB-4 receptor activity, e.g., amyotrophic
 CC lateral sclerosis (Lou Gehrig's disease), Bell's palsy, spinal muscular
 CC atrophy, brain trauma, stroke, ischemia, Alzheimer's disease, Parkinson's
 CC disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's
 CC syndrome, nerve deafness, neuropathy, muscular dystrophy, extramammary
 CC Paget's disease, gastric, pancreatic, prostate, breast and ovarian
 CC cancer, cervical carcinoma, endometrial adenocarcinoma, pancreatic D
 CC cells-somatostatinoma and Zollinger-Ellison syndrome. The agent comprised
 CC in the pharmaceutical composition includes a polypeptide (e.g., a soluble
 CC ligand binding domain of ErbB-4 i.e., IGF1; or a monoclonal, polyclonal,
 CC humanized, single chain antibody or an immunoreactive derivative of an
 CC antibody) capable of binding the endogenous protein affecting ErbB-4
 CC receptor activity. Traceable synthetic/recombinant NRG-4-tagged molecules
 CC can serve as a diagnostic tool in which cells binding NRG-4 can be
 CC measured. Sequences AAG66044-53 represent the EGF-like motifs of various
 CC growth factors

XX Sequence 48 AA;

Query Match 100.0%; Score 277; DB 5; Length 48;
 Best Local Similarity 100.0%; Pred. No. 7.2e-21;
 Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDFL 47
 |||||
 Db 2 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDFL 48

RESULT 3

AAE36807

ID AAE36807 standard; protein; 52 AA.

XX AAE36807;

XX 07-AUG-2003 (first entry)

XX Human neuregulin 3 EGF-like domain.

XX Epidermal growth factor receptor; EGF; therapy; psoriasis; carcinoma;
 KW cancer; rhabdomyosarcoma; mesothelioma; melanoma; glioblastoma; human;
 KW receptor; EGF; neuregulin 3.

XX Homo sapiens.

XX WO2003014159-A1.

XX 20-FEB-2003.

XX 05-AUG-2002; 2002WO-AU001042.

XX 03-AUG-2001; 2001AU-00006827.

XX 03-AUG-2001; 2001AU-00006828.

XX 01-NOV-2001; 2001US-0335393P.

XX 01-NOV-2001; 2001US-0336560P.

XX 11-MAY-2002; 2002AU-00002731.

XX 11-JUN-2002; 2002US-0388171P.

XX (CSIR) COMMONWEALTH SCI & IND RES ORG.

XX (BIOM-) BIOMOLECULAR RES INST LTD.

XX (HALL-) HALL INST MEDICAL RES WALTER & ELIZA.

XX (LUDW-) LUDWIG INST CANCER RES.

XX Adams TE, Burgess AW, Elleman TC, Garrett TPJ, Jorissen RN;

XX Lou M, Lovrecz GO, McKern NM, Nice EC, Ward CW;

XX WPI; 2003-269181/26.

XX Selecting or designing compounds that interact with or inhibit formation

PT of active dimers of the EGF receptor family, and useful for the
 PT prevention and treatment of disorders, such as psoriasis and cancer of
 PT the breast, brain or colon.

XX
 FS Disclosure: Fig 2; 354pp; English.

XX The invention relates to a method of selecting or designing a compound
 CC that interacts with or inhibits the formation of active dimers of a
 CC receptor of the epidermal growth factor receptor (EGFR) family. The
 CC methods and compositions of the invention are useful for the prevention
 CC and treatment of disorders associated with signalling by a molecule of
 CC the EGFR family such as psoriasis and cancer of the pancreas, breast,
 CC brain, colon, prostate, ovary, cervix, lung, head and neck, melanoma,
 CC rhabdomyosarcoma, mesothelioma, squamous carcinomas of the skin and
 CC glioblastomas. The present sequence is epidermal growth factor (EGF) like
 CC domain of human heregulin 3 protein. This sequence is used to illustrate
 CC the method of the invention

XX Sequence 52 AA;

Query Match 100.0%; Score 277; DB 6; Length 52;
 Best Local Similarity 100.0%; Pred. No. 7.8e-21;
 Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HFPCRDLDLAYCLNDGECFVIETLTGSHKCRCKEGYQGVRCDOFL 47
 Db 2 HFPCRDLDLAYCLNDGECFVIETLTGSHKCRCKEGYQGVRCDOFL 48

RESULT 4

AA05451
 ID AAY05451 standard; protein; 157 AA.

XX
 AC AAY05451;

XX
 DT 06-JUL-1999 (first entry)

XX Human heregulin-like factor sequence.

XX Human heregulin-like factor; HLF; cell growth regulator; diagnosis;
 KW neural system disorder; cancer.

XX Homo sapiens.

XX WO9857989-A1.

XX 23-DEC-1998.

XX 16-JUN-1998; 98WO-US012403.

XX 17-JUN-1997; 97US-0049942P.

XX (HUMA-) HUMAN GENOME SCI INC.
 PA (GEOU) UNIV GEORGETOWN.

XX Young P, Ruben SM, King CR, Hijazi MM;

XX WPI; 1999-095327/08.

XX N-PSDB; AAX36423.

XX New isolated heregulin-like factor - used to develop products for the
 PT diagnosis and treatment of disorders involving regulation of cell growth,
 PT particularly cancers.

XX Claim 17; Page 86-87; 118pp; English.

XX This sequence is the human heregulin-like factor (HLF) of the invention.
 CC The HLF is involved in the regulation of cell growth. Detection of
 CC different levels of expression of the HLF gene can be used for the
 CC diagnosis of disorders, e.g. in the neural system. In particular,
 CC detection of different levels of HLF gene expression in cells or body
 CC fluid of an individual can be used for diagnosing cancer. The products
 CC can also be used in the treatment of disorders involving abnormal levels

CC of HLF activity
 XX
 SQ Sequence 157 AA;

Query Match 100.0%; Score 277; DB 2; Length 157;
 Best Local Similarity 100.0%; Pred. No. 2.1e-20;
 Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HFPCRDLDLAYCLNDGECFVIETLTGSHKCRCKEGYQGVRCDOFL 47
 Db 31 HFPCRDLDLAYCLNDGECFVIETLTGSHKCRCKEGYQGVRCDOFL 77

RESULT 5

ADN48870
 ID ADN48870 standard; protein; 157 AA.

XX
 AC ADN48870;

XX
 DT 15-JUL-2004 (first entry)

XX Human heregulin-like factor (HLF) protein.

XX HLF; heregulin-like factor; diagnosis; cancer; gene therapy; human.

XX Homo sapiens.

XX Key Location/Qualifiers
 FT Domain 26..93
 FT /note = EGF domain

XX US6727077-B1.

XX 27-APR-2004.

XX 16-JUN-1998; 98US-00097681.

XX 17-JUN-1997; 97US-0049492P.

XX (HUMA-) HUMAN GENOME SCI INC.

XX (GEOU) UNIV GEORGETOWN MEDICAL CENT.

XX Young PE, King CR, Hijazi M, Ruben SM;

XX WPI; 2004-338520/31.

XX N-PSDB; ADN48869.

XX New heregulin-like factor (HLF) nucleic acid or polypeptide, useful for
 PT preparing a composition for diagnosing or treating cancer.

XX Claim 1; SEQ ID NO 2; 48pp; English.

XX The present invention relates to novel heregulin-like factor (HLF)
 CC polypeptides and the encoding polynucleotides. The invention is useful
 CC for preparing a composition for diagnosing and treating cancer. The
 CC invention is also useful in gene therapy. The present sequence is human
 CC heregulin-like factor (HLF) protein.

XX Sequence 157 AA;

Query Match 100.0%; Score 277; DB 8; Length 157;
 Best Local Similarity 100.0%; Pred. No. 2.1e-20;
 Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HFPCRDLDLAYCLNDGECFVIETLTGSHKCRCKEGYQGVRCDOFL 47
 Db 31 HFPCRDLDLAYCLNDGECFVIETLTGSHKCRCKEGYQGVRCDOFL 77

RESULT 6

AAW97621

ID AAW97621 standard; protein; 360 AA.

XX

AC AAW97621;
 XX 10-MAY-1999 (first entry)
 XX Human neuregulin related ligand NRG3 extracellular domain.
 DE
 XX
 XX Neuregulin related ligand; NRG3; hNRG3B1; human; ErbB4 receptor;
 KW signal transduction; nervous system disorder; neurodegeneration;
 KW neuropathy; therapy; diagnosis.
 XX
 XX Homo sapiens.
 OS
 XX
 XX WO9902681-A1.
 XX
 XX 21-JAN-1999.
 XX
 XX 30-JUN-1998; 98WO-US013411.
 XX
 XX 09-JUL-1997; 97US-0052019P.
 XX 24-JUL-1997; 97US-00899437.
 XX
 XX (GETH) GENENTECH INC.
 XX
 XX Godowski PJ, Mark MR, Zhang D;
 XX WPI; 1999-120882/10.
 XX
 XX This is the extracellular domain (ECD, aa1-360 of human neuregulin
 CC related ligand NRG3 (see also AAW97618), a novel member of the epidermal
 CC growth factor (EGF)-like family of protein ligands. NRG3 binds to the
 CC ErbB4 receptor, but not to the ErbB2 or ErbB3 receptor, activates ErbB4
 CC receptor tyrosine phosphorylation. The invention provides human and
 CC murine polypeptides (see also AAW97617) that have at least 75% homology
 CC to the NRG3 ECD, as well as expression vectors, host cells and methods
 CC for the recombinant production of novel NRG3s. The NRG3 polypeptides and
 CC polynucleotides and can be used to enhance the survival, proliferation or
 CC differentiation of cells having the ErbB4 receptor in vivo and in vitro.
 CC They can be used to prevent or treat damage to a nerve or damage to other
 CC NRG3-expressing or NRG3-responsive cells, e.g. brain, heart, or kidney
 CC cells. In particular, they can be used to treat diseases which involve
 CC neural cell growth such as demyelination, or damage or loss of glial
 CC cells (e.g. multiple sclerosis). They can be used to treat patients whose
 CC nervous system has been damaged by e.g. trauma, surgery, stroke,
 CC ischaemia, infection, metabolic disease, nutritional deficiency,
 CC malignancy, or toxic agents. NRG3 can also be used to treat motor neuron
 CC disorders such as amyotrophic lateral sclerosis (Lou Gehrig's disease),
 CC Bell's palsy, conditions involving spinal muscular atrophy or paralysis,
 CC neurodegenerative disorders such as Alzheimer's disease, Parkinson's
 CC disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's
 CC syndrome, nerve deafness, and Meniere's disease. They can also be used to
 CC treat neuropathies associated with systemic disease including post-polio
 CC Refsum's disease, abetalipoproteinemia, Tangier disease, Krabbe's
 CC disease, metachromatic leukodystrophy, Fabry's disease and Dejerine-
 CC Sottas syndrome, to treat disease of skeletal muscle of smooth muscle,
 CC such as muscular dystrophy or diseases caused by skeletal or smooth
 CC muscle wasting. The products can also be used for detection, diagnosis,
 CC screening
 XX
 XX Sequence 360 AA;
 XX
 XX Query March 100.0%; Score 277; DB 2; Length 360;
 XX Best Local Similarity 100.0%; Pred. No. 4.6e-20;
 XX Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 XX
 XX 1 HFKPCRDKLAYCLNDGECFVIETLTGSHKCRCKEGYQGVRCDFL 47

Db 286 HFKPCRDKLAYCLNDGECFVIETLTGSHKCRCKEGYQGVRCDFL 332
 |||||
 RESULT 7
 AAW97620
 ID AAW97620 standard; protein; 362 AA.
 XX
 XX AAW97620;
 XX
 XX 10-MAY-1999 (first entry)
 XX
 XX Mouse neuregulin related ligand NRG3 extracellular domain.
 DE
 XX
 XX Neuregulin related ligand; NRG3; mouse; ErbB4 receptor;
 KW signal transduction; nervous system disorder; neurodegeneration;
 KW neuropathy; therapy; diagnosis.
 XX
 XX Mus sp.
 OS
 XX WO9902681-A1.
 XX
 XX 21-JAN-1999.
 XX
 XX 30-JUN-1998; 98WO-US013411.
 XX
 XX 09-JUL-1997; 97US-0052019P.
 XX 24-JUL-1997; 97US-00899437.
 XX
 XX (GETH) GENENTECH INC.
 XX
 XX Godowski PJ, Mark MR, Zhang D;
 XX WPI; 1999-120882/10.
 XX
 XX New isolated neuregulin related ligand-3 - used to develop products for
 PT treating nervous system disorders, e.g. stroke, ischaemia, infection,
 PT malignancy, Alzheimer's disease or Down's syndrome.
 XX
 XX Claim 5(a); Page 62-63; 10pp; English.
 XX
 XX This is the extracellular domain (ECD, aa1-362) of murine neuregulin
 CC related ligand NRG3 (see also AAW97617), a novel member of the epidermal
 CC growth factor (EGF)-like family of protein ligands. NRG3 binds to the
 CC ErbB4 receptor, but not to the ErbB2 or ErbB3 receptor, activates ErbB4
 CC receptor tyrosine phosphorylation. The invention provides human and
 CC murine polypeptides (see also AAW97618) that have at least 75% homology
 CC to the NRG3 ECD, as well as expression vectors, host cells and methods
 CC for the recombinant production of novel NRG3s. The NRG3 polypeptides and
 CC polynucleotides and can be used to enhance the survival, proliferation or
 CC differentiation of cells having the ErbB4 receptor in vivo and in vitro.
 CC They can be used to prevent or treat damage to a nerve or damage to other
 CC NRG3-expressing or NRG3-responsive cells, e.g. brain, heart, or kidney
 CC cells. In particular, they can be used to treat diseases which involve
 CC neural cell growth such as demyelination, or damage or loss of glial
 CC cells (e.g. multiple sclerosis). They can be used to treat patients whose
 CC nervous system has been damaged by e.g. trauma, surgery, stroke,
 CC ischaemia, infection, metabolic disease, nutritional deficiency,
 CC malignancy, or toxic agents. NRG3 can also be used to treat motor neuron
 CC disorders such as amyotrophic lateral sclerosis (Lou Gehrig's disease),
 CC Bell's palsy, conditions involving spinal muscular atrophy or paralysis,
 CC neurodegenerative disorders such as Alzheimer's disease, Parkinson's
 CC disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's
 CC syndrome, nerve deafness, and Meniere's disease. They can also be used to
 CC treat neuropathies associated with systemic disease including post-polio
 CC Refsum's disease, abetalipoproteinemia, Tangier disease, Krabbe's
 CC disease, metachromatic leukodystrophy, Fabry's disease and Dejerine-
 CC Sottas syndrome, to treat disease of skeletal muscle of smooth muscle,
 CC such as muscular dystrophy or diseases caused by skeletal or smooth
 CC muscle wasting. The products can also be used for detection, diagnosis,
 CC screening
 XX
 XX Sequence 360 AA;
 XX
 XX Query March 100.0%; Score 277; DB 2; Length 360;
 XX Best Local Similarity 100.0%; Pred. No. 4.6e-20;
 XX Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 XX
 XX 1 HFKPCRDKLAYCLNDGECFVIETLTGSHKCRCKEGYQGVRCDFL 47


```

XX SQ Sequence 362 AA;
Query Match 100.0%; Score 277; DB 2; Length 362;
Best Local Similarity 100.0%; Pred. No. 4.6e-20;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFPCRDKDLAYCLNDGECFVITLTGSHKCRCKEGYQGVRCDOFL 47
Db 288 HFPCRDKDLAYCLNDGECFVITLTGSHKCRCKEGYQGVRCDOFL 334

RESULT 8
ABB08776
ID ABB08776 standard; protein; 502 AA.
AC ABB08776;
XX ABB08776;
DT 16-MAY-2002 (first entry)
DE Human neuregulin 55 SEQ ID NO 2.
KW Human; neuregulin 55; nervous system; development; neuropsychopathy;
KW tumour; inflammation; immunological disease.
XX Homo sapiens.
OS Homo sapiens.
XX CN1324826-A.
XX 05-DEC-2001.
XX 19-MAY-2000; 2000CN-00115761.
XX 19-MAY-2000; 2000CN-00115761.
XX (BODE-) BODE GENE DEV CO LTD SHANGHAI.
XX Mao Y, Xie Y;
XX WPI; 2002-217507/28.
XX N-PSDB; ABL41244.
XX New polypeptide human neuregulin 55 and polynucleotides for encoding
XX same.
XX Claim 1; Page 27-28 (Disclosure); 35pp; Chinese.
XX The invention relates to human neuregulin 55, polynucleotide for coding
XX this polypeptide and a method for producing this polypeptide by using DNA
XX recombination technique. The invention also discloses the method for
XX curing several diseases, such as nervous system developmental diseases,
XX neuropsychopathy, other nervous system diseases, developmental disturbance,
XX tumours, inflammations and immunological disease by using said
XX polypeptide. The invention also discloses an antagonist for resisting
XX said polypeptide and its therapeutic action and also discloses the
XX application of polynucleotide to coding this novel human neuregulin 55.
XX The present sequence is that of human neuregulin 55
XX Sequence 502 AA;
Query Match 100.0%; Score 277; DB 5; Length 502;
Best Local Similarity 100.0%; Pred. No. 6.3e-20;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFPCRDKDLAYCLNDGECFVITLTGSHKCRCKEGYQGVRCDOFL 47
Db 92 HFPCRDKDLAYCLNDGECFVITLTGSHKCRCKEGYQGVRCDOFL 138

RESULT 9
AAW97619
ID AAW97619 standard; protein; 696 AA.
XX

```

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AC AAW97619;
XX
DT 10-MAY-1999 (first entry)
XX
DE Human neuregulin related ligand NRG3 (splice variant).
XX
KW Neuregulin related ligand; NRG3; hNRG3B1; human; ErbB4 receptor;
KW signal transduction; nervous system disorder; neurodegeneration;
KW neuropathy; therapy; diagnosis; splice variant.
XX
OS Homo sapiens.
XX
XX Key Location/Qualifiers
FH Domain 1..360
FT /note= "extracellular domain, specifically claimed in
FT Claim 5(a)"
FT 66..91
FT /note= "hydrophobic region"
FT 101..284
FT /note= "mucin-like Ser/thr-rich region, contains sites
FT for O-linked glycosylation"
FT 285..354
FT /note= "EGF-like domain"
FT 356..394
FT /note= "transmembrane domain"
XX
XX WO9902681-A1.
XX
XX 21-JAN-1999.
XX
XX 30-JUN-1998; 98WO-US013411.
XX
XX 09-JUL-1997; 97US-0052019P.
XX 24-JUL-1997; 97US-00899437.
XX (GETH ) GENENTECH INC.
XX
XX Godowski PJ, Mark MR, Zhang D;
XX WPI; 1999-120882/10.
XX N-PSDB; AAX06989.
XX
XX New isolated neuregulin related ligand-3 - used to develop products for
XX treating nervous system disorders, e.g. stroke, ischaemia, infection,
XX malignancy, Alzheimer's disease or Down's syndrome.
XX
XX Example 1; Page 78-81; 101pp; English.
XX
XX This is the amino acid sequence of splice variant hNRG3B2 of human
XX neuregulin related ligand NRG3, a novel member of the epidermal growth
XX factor (EGF)-like family of protein ligands that binds to the ErbB4
XX receptor, but not to the ErbB2 or ErbB3 receptor, and which activates
XX ErbB4 receptor tyrosine phosphorylation. The sequence was deduced from
XX the nucleotide sequence of a cDNA clone (see AAX06989) from a foetal
XX brain library. hNRG3B2 lacks amino acids 529-552 of hNRG3B1 (see
XX AAW97618) but retains the EGF-like domain and is expected to exhibit
XX biological activity. The invention provides human and murine NRG3
XX polypeptides (see AAW97617), expression vectors, host cells and methods
XX for the recombinant production of NRG3s. The NRG3 polypeptides and
XX polynucleotides and can be used to enhance the survival, proliferation or
XX differentiation of cells having the ErbB4 receptor in vivo and in vitro.
XX They can be used to prevent or treat damage to a nerve or damage to other
XX NRG3-expressing or NRG3-responsive cells, e.g. brain, heart, or kidney
XX cells. In particular, they can be used to treat diseases which involve
XX neural cell growth such as demyelination, or damage or loss of glial
XX cells (e.g. multiple sclerosis). They can be used to treat patients whose
XX nervous system has been damaged by e.g. trauma, surgery, stroke,
XX ischaemia, infection, metabolic disease, nutritional deficiency,
XX malignancy, or toxic agents. NRG3 can also be used to treat motor neuron
XX disorders such as amyotrophic lateral sclerosis (Lou Gehrig's disease),
XX Bell's palsy, conditions involving spinal muscular atrophy or paralysis,
XX neurodegenerative disorders such as Alzheimer's disease, Parkinson's
XX disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's

```

CC syndrome, nerve deafness, and Meniere's disease. They can also be used to
 CC treat neuropathies associated with systemic disease including post-polio
 CC syndrome, hereditary neuropathies including Charcot-Marie-Tooth disease,
 CC Refsum's disease, abetalipoproteinemia, Tangier disease, Krabbe's
 CC disease, metachromatic leukodystrophy, Fabry's disease and Dejerine-
 CC Sottas syndrome, to treat disease of skeletal muscle of smooth muscle,
 CC such as muscular dystrophy or diseases caused by skeletal or smooth
 CC muscle wasting. The products can also be used for detection, diagnosis,
 CC for the production of transgenic or knockout animals or for drug
 CC screening
 CC
 XX
 SQ Sequence 696 AA;

Query Match 100.0%; Score 277; DB 2; Length 696;
 Best Local Similarity 100.0%; Pred. No. 8.4e-20;
 Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCKCKEGYGVRCDOFL 47
 Db 286 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCKCKEGYGVRCDOFL 332

RESULT 10
 ABG32080
 ID ABG32080 standard; protein; 696 AA.
 AC ABG32080;
 XX
 XX 05-NOV-2002 (first entry)
 DT
 DE
 DE Novel human neuroregulin related ligand NRG3B2.
 XX
 XX Neuroregulin related ligand; NRG3; neuroprotective; cell therapy;
 KW epidermal growth factor-like domain; EGF-like domain; Bell's palsy;
 KW ErbB4 receptor detection; amyotrophic lateral sclerosis; paralysis;
 KW lou Gehrig's disease; spinal muscular atrophy; multiple sclerosis;
 KW neurodegenerative disorder; Alzheimer's disease; Parkinson's disease;
 KW epilepsy; Huntington's chorea; Down's syndrome; nerve deafness;
 KW Meniere's disease; neuropathy; distal sensorimotor neuropathy;
 KW autonomic neuropathy; hereditary neuropathy; Charcot-Marie-Tooth disease;
 KW Refsum's disease; Abetalipoproteinemia; Tangier disease;
 KW Krabbe's disease; Metachromatic leukodystrophy; Fabry's disease;
 KW Dejerine-Scottas syndrome; human; NRG3B2.

XX Homo sapiens.
 XX
 XX US2002082229-A1.
 XX
 XX 27-JUN-2002.
 XX
 XX 26-MAR-2001; 2001US-00817647.
 XX
 XX 24-JUL-1997; 97US-0053641P.
 XX 30-JUN-1998; 98US-00107979.
 XX
 XX (GETH) GENENTECH INC.
 XX
 XX Godowski PJ, Mark MR, Zhang D;
 PI
 XX WPI; 2002-617760/66.
 DR N-PSDB; ABK90730.
 DR

XX A new neuroregulin related ligand designated NRG3 has an epidermal growth
 PT factor-like domain and binds to ErbB4 receptor, and is useful to prevent
 PT or treat NRG3 associated disorders, particularly nerve damage.

XX Example 1; Fig 4A-B; 60pp; English.

XX The invention describes a polypeptide comprising an amino acid sequence
 CC encoding an epidermal growth factor (EGF)-like domain, and having the
 CC binding characteristics of neuroregulin related ligand (NRG3). NRG3
 CC polypeptide can be used to detect ErbB4 receptor in a mammalian tissue
 CC sample, and also to prevent or treat disorders associated with NRG3 such

CC as: amyotrophic lateral sclerosis (lou Gehrig's disease), Bell's palsy
 CC and various conditions involving spinal muscular atrophy or paralysis,
 CC neurodegenerative disorders such as Alzheimer's disease, Parkinson's
 CC disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's
 CC syndrome, nerve deafness, Meniere's disease, neuropathy such as distal
 CC sensorimotor neuropathy or autonomic neuropathy, hereditary neuropathies
 CC such as Charcot-Marie-Tooth disease, Refsum's disease,
 CC Abetalipoproteinemia, Tangier disease, Krabbe's disease, Metachromatic
 CC leukodystrophy, Fabry's disease and Dejerine-Scottas syndrome. This is
 CC the amino acid sequence of the novel human neuroregulin related ligand
 CC NRG3B2

XX Sequence 696 AA;

Query Match 100.0%; Score 277; DB 5; Length 696;
 Best Local Similarity 100.0%; Pred. No. 8.4e-20;
 Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCKCKEGYGVRCDOFL 47
 Db 286 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCKCKEGYGVRCDOFL 332

RESULT 11
 AAW97617
 ID AAW97617 standard; protein; 713 AA.
 XX
 AC AAW97617;
 XX
 XX 10-MAY-1999 (first entry)
 DT
 DE Mouse neuroregulin related ligand NRG3.
 DE
 XX Neuroregulin related ligand; NRG3; mouse; ErbB4 receptor;
 KW signal transduction; nervous system disorder; neurodegeneration;
 KW neuropathy; therapy; diagnosis.

XX Mus sp.
 XX Key Location/Qualifiers
 FH Domain 1..362 "extracellular domain, specifically claimed in
 FT Claim 5(a)"
 FT Region 66..91
 FT Region 105..286
 FT /note= "hydrophobic region"
 FT /note= "mucin-like Ser/Thr-rich region, contains sites
 FT for O-linked glycosylation"
 FT Domain 287..334
 FT /note= "EGF-like domain"
 FT Domain 363..385
 FT /note= "transmembrane domain"

XX WO9902681-A1.

XX 21-JAN-1999.

XX 30-JUN-1998; 98WO-US013411.

XX 09-JUL-1997; 97US-0052019P.

XX 24-JUL-1997; 97US-00899437.

XX (GETH) GENENTECH INC.

XX Godowski PJ, Mark MR, Zhang D;

XX WPI; 1999-120882/10.

XX N-PSDB; AAX06987.

XX New isolated neuroregulin related ligand-3 - used to develop products for
 PT treating nervous system disorders, e.g. stroke, ischaemia, infection,

XX malignancy, Alzheimer's disease or Down's syndrome.

Claim 5(b); Page 59-62; 101pp; English.

This is the amino acid sequence of murine neuregulin related ligand NRG3, a novel member of the epidermal growth factor (EGF)-like family of protein ligands that binds to the ErbB4 receptor, but not to the ErbB2 or ErbB3 receptor, and which activates ErbB4 receptor tyrosine phosphorylation. The sequence was deduced from the nucleotide sequences of cDNA clones (see AAX06987) from a mouse brain library. The EGF-like domain of NRG3 is distinct from those of NRG1 or NRG2, and NRG3 displays receptor binding characteristics that are distinct from those of other neuregulins. The invention provides human and murine NRG3 polypeptides (see also AAW97618), expression vectors, host cells and methods for the recombinant production of NRG3s. The NRG3 polypeptides and differentiation of cells having the ErbB4 receptor in vivo and in vitro. They can be used to prevent or treat damage to a nerve or damage to other NRG3-expressing or NRG3-responsive cells, e.g. brain, heart, or kidney cells. In particular, they can be used to treat diseases which involve neural cell growth such as demyelination, or damage or loss of glial cells (e.g. multiple sclerosis). They can be used to treat patients whose nervous system has been damaged by e.g. trauma, surgery, stroke, ischaemia, infection, metabolic disease, nutritional deficiency, malignancy, or toxic agents. NRG3 can also be used to treat motor neuron disorders such as amyotrophic lateral sclerosis (Lou Gehrig's disease), Bell's palsy, conditions involving spinal muscular atrophy or paralysis, neurodegenerative disorders such as Alzheimer's disease, Parkinson's disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's syndrome, nerve deafness, and Meniere's disease. They can also be used to treat neuropathies associated with systemic disease including post-polio syndrome, hereditary neuropathies including Charcot-Marie-Tooth disease, Refsum's disease, abetalipoproteinemia, Tangier disease, Krabbe's disease, metachromatic leukodystrophy, Fabry's disease and Dejerine-Sottas syndrome, to treat disease of skeletal muscle of smooth muscle, such as muscular dystrophy or diseases caused by skeletal or smooth muscle wasting. The products can also be used for detection, diagnosis, or for the production of transgenic or knockout animals or for drug screening

Sequence 713 AA;

Query Match 100.0%; Score 277; DB 2; Length 713;
Best Local Similarity 100.0%; Pred. No. 8.6e-20;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFKEPCRDKLAYCLNDGECFVIETLTGSHKHCCKEGYQGVRCDFL 47
Db 288 HFKEPCRDKLAYCLNDGECFVIETLTGSHKHCCKEGYQGVRCDFL 334

RESULT 12

ABG32061
ID ABG32061 standard; protein; 713 AA.

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XX

Neuregulin related ligand; NRG3; neuroprotective; cell therapy;
epidermal growth factor-like domain; EGF-like domain; Bell's palsy;
ErbB4 receptor detection; amyotrophic lateral sclerosis; paralysis;
Lou Gehrig's disease; spinal muscular atrophy; multiple sclerosis;
neurodegenerative disorder; Alzheimer's disease; Parkinson's disease;
epilepsy; Huntington's chorea; Down's syndrome; nerve deafness;
Meniere's disease; neuropathy; distal sensorimotor neuropathy;
autonomic neuropathy; hereditary neuropathy; Charcot-Marie-Tooth disease;
Refsum's disease; Abetalipoproteinemia; Tangier disease;
Krabbe's disease; Metachromatic leukodystrophy; Fabry's disease;
Dejerine-Scottas syndrome; mouse.

Mus sp.

XX

Key
Domain

Location/Qualifiers
1..362
/label= Extracellular domain
/note= "Specifically Claimed in claim 5"
288..334
/label= EGF-like domain
/note= "Extracellular epidermal growth factor-like domain. Specifically claimed in claim 2"

PN US2002082229-A1.

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OS Homo sapiens.

XX Key Location/Qualifiers

PH 1. .360

FT /note= "extracellular domain, specifically claimed in

FT Claim 5(a)"

FT 66. .91

FT Region /note= "hydrophobic region"

FT 101. .284

FT Region /note= "mucin-like Ser/Thr-rich region, contains sites

FT for O-linked glycosylation"

FT 285. .354

FT Domain /note= "EGF-like domain"

FT 356. .394

FT Domain /note= "transmembrane domain"

XX WO9902681-A1.

XX 21-JAN-1999.

XX 30-JUN-1998; 98WO-US013411.

XX 09-JUL-1997; 97US-0052019P.

XX 24-JUL-1997; 97US-00899437.

XX (GETH) GENENTECH INC.

XX Godowski PJ, Mark MR, Zhang D;

XX WPI; 1999-120882/10.

XX N-PSDB; AAX06988.

XX New isolated neuregulin related ligand-3 - used to develop products for

XX treating nervous system disorders, e.g. stroke, ischaemia, infection,

XX malignancy, Alzheimer's disease or Down's syndrome.

XX Claim 5(b); Page 66-69; 101pp; English.

XX This is the amino acid sequence of human neuregulin related ligand NRG3,

XX a novel member of the epidermal growth factor (EGF)-like family of

XX protein ligands that binds to the ErbB4 receptor, but not to the ErbB2 or

XX ErbB3 receptor, and which activates ErbB4 receptor tyrosine

XX phosphorylation. The sequence was deduced from the nucleotide sequence of

XX a cDNA clone (see AAX06988) from a foetal brain library. The EGF-like

XX domain of NRG3 is distinct from those of NRG1 or NRG2, and NRG3 displays

XX receptor binding characteristics that are distinct from those of other

XX neuregulins. An alternatively spliced form of human NRG3 is provided in

XX AAW97619. The invention provides human and murine NRG3 polypeptides (see

XX also AAW97617), expression vectors, host cells and methods for the

XX recombinant production of NRG3s. The NRG3 polypeptides and

XX polynucleotides and can be used to enhance the survival, proliferation or

XX differentiation of cells having the ErbB4 receptor in vivo and in vitro.

XX They can be used to prevent or treat damage to a nerve or damage to other

XX NRG3-expressing or NRG3-responsive cells, e.g. brain, heart, or kidney

XX cells. In particular, they can be used to treat diseases which involve

XX neural cell growth such as demyelination, or damage or loss of glial

XX cells (e.g. multiple sclerosis). They can be used to treat patients whose

XX nervous system has been damaged by e.g. trauma, surgery, stroke,

XX ischaemia, infection, metabolic disease, nutritional deficiency,

XX malignancy, or toxic agents. NRG3 can also be used to treat motor neuron

XX disorders such as amyotrophic lateral sclerosis (Lou Gehrig's disease),

XX Bell's palsy, conditions involving spinal muscular atrophy or paralysis,

XX neurodegenerative disorders such as Alzheimer's disease, Parkinson's

XX disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's

XX syndrome, nerve deafness, and Meniere's disease. They can also be used to

XX treat neuropathies associated with systemic disease including post-polio

XX syndrome, hereditary neuropathies including Charcot-Marie-Tooth disease,

XX Refsum's disease, abetalipoproteinemia, Tangier disease, Krabbe's

XX disease, metachromatic leukodystrophy, Fabry's disease and Dejerine-

XX Sottas syndrome, to treat disease of skeletal muscle of smooth muscle,

XX such as muscular dystrophy or diseases caused by skeletal or smooth

XX muscle wasting. The products can also be used for detection, diagnosis,

XX for the production of transgenic or knockout animals or for drug

CC screening

XX SQ Sequence 720 AA;

Query Match 100.0%; Score 277; DB 2; Length 720;

Best Local Similarity 100.0%; Pred. No. 8.7e-20;

Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFKPCRDLDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 47

DB 286 HFKPCRDLDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 332

RESULT 14

AA05452

ID AAY05452 standard; protein; 720 AA.

XX AC AAY05452;

XX DT 06-JUL-1999 (first entry)

XX DE Human heregulin-like factor sequence.

XX KW Human heregulin-like factor; HLF; cell growth regulator; diagnosis;

XX KW neural system disorder; cancer.

XX OS Homo sapiens.

XX PN WO9857989-A1.

XX PD 23-DEC-1998.

XX PF 16-JUN-1998; 98WO-US012403.

XX PR 17-JUN-1997; 97US-0049942P.

XX PA (HUMA-) HUMAN GENOME SCI INC.

XX PA (GEOJ) UNIV GEORGETOWN.

XX PI Young P, Ruben SM, King CR, Hijazi MM;

XX WPI; 1999-095327/08.

XX New isolated heregulin-like factor - used to develop products for the

XX diagnosis and treatment of disorders involving regulation of cell growth,

XX particularly cancers.

XX PS Disclosure; Page 97-99; 118pp; English.

XX This sequence is the human heregulin-like factor (HLF) of the invention.

XX The HLF is involved in the regulation of cell growth. Detection of

XX different levels of expression of the HLF gene can be used for the

XX diagnosis of disorders, e.g. in the neural system. In particular,

XX detection of different levels of HLF gene expression in cells or body

XX fluid of an individual can be used for diagnosing cancer. The products

XX can also be used in the treatment of disorders involving abnormal levels

XX of HLF activity

XX SQ Sequence 720 AA;

Query Match 100.0%; Score 277; DB 2; Length 720;

Best Local Similarity 100.0%; Pred. No. 8.7e-20;

Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFKPCRDLDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 47

DB 286 HFKPCRDLDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 332

RESULT 15

ABG32065

ID ABG32065 standard; protein; 720 AA.

XX

AC ABG32065;
 XX
 DT 05-NOV-2002 (first entry)
 XX
 DE Human novel neuregulin related ligand NRG3B1.
 XX
 KW Neuregulin related ligand; NRG3; neuroprotective; cell therapy;
 KW epidermal growth factor-like domain; EGF-like domain; Bell's palsy;
 KW ErbB4 receptor detection; amyotrophic lateral sclerosis; paralysis;
 KW Lou Gehrig's disease; spinal muscular atrophy; multiple sclerosis;
 KW neurodegenerative disorder; Alzheimer's disease; Parkinson's disease;
 KW epilepsy; Huntington's chorea; Down's syndrome; nerve deafness;
 KW Meniere's disease; neuropathy; distal sensorimotor neuropathy;
 KW autonomic neuropathy; hereditary neuropathy; Charcot-Marie-Tooth disease;
 KW Refsum's disease; Abetalipoproteinaemia; Tangier disease;
 KW Krabbe's disease; Metachromatic leukodystrophy; Fabry's disease;
 KW Dejerine-Scottas syndrome; human; gene; ss; NRG3B1.
 XX
 OS Homo sapiens.
 XX
 FH Key Location/Qualifiers
 FT Domain 1..360
 FT /label= Extracellular domain
 FT /note= "Specifically claimed in claim 5"
 FT Domain 286..332
 FT /label= EGF-like domain
 FT /note= "Extracellular epidermal growth factor-like domain"
 FT
 FT
 XX US2002082229-A1.
 XX
 XX 27-JUN-2002.
 XX
 XX 26-MAR-2001; 2001US-00817647.
 XX
 XX 24-JUL-1997; 97US-0053641P.
 XX 30-JUN-1998; 98US-00107979.
 XX
 XX (GETH) GENENTECH INC.
 XX
 XX Godowski PJ, Mark MR, Zhang D;
 XX
 XX WPI; 2002-617760/66.
 XX N-PSDB; ABK90731.
 XX
 XX A new neuregulin related ligand designated NRG3 has an epidermal growth factor-like domain and binds to ErbB4 receptor, and is useful to prevent or treat NRG3 associated disorders, particularly nerve damage.
 XX
 XX Example 1; Fig 4A-B; 60pp; English.
 XX
 XX The invention describes a polypeptide comprising an amino acid sequence encoding an epidermal growth factor (EGF)-like domain, and having the binding characteristics of neuregulin related ligand (NRG3). NRG3 polypeptide can be used to detect ErbB4 receptor in a mammalian tissue sample, and also to prevent or treat disorders associated with NRG3 such as: amyotrophic lateral sclerosis (Lou Gehrig's disease), Bell's palsy and various conditions involving spinal muscular atrophy or paralysis, neurodegenerative disorders such as Alzheimer's disease, Parkinson's disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's syndrome, nerve deafness, Meniere's disease, neuropathy such as distal sensorimotor neuropathy or autonomic neuropathy, hereditary neuropathies such as Charcot-Marie-Tooth disease, Refsum's disease, Abetalipoproteinaemia, Tangier disease, Krabbe's disease, Metachromatic leukodystrophy, Fabry's disease and Dejerine-Scottas syndrome. This is the amino acid sequence of the novel human neuregulin related ligand (NRG3B1)
 XX
 XX Sequence 720 AA;
 SQ

Query Match 100.0%; Score 277; DB 5; Length 720;
 Best Local Similarity 100.0%; Pred. No. 8.7e-20;
 Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HPKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDFL 47
 |||||
 DB 286 HPKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDFL 332
 |||||

Search completed: November 2, 2004, 13:24:19
 Job time : 159 secs

GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: November 2, 2004, 13:28:26 ; Search time 156 Seconds
(without alignments)
108.079 Million cell updates/sec

Title: US-09-107-979-4
Perfect score: 47
Sequence: 1 HFKECRDKLAYCLNDGECF.....SHKHCRCKEGYQGVRCQDFL 47

Scoring table: OLIGO

Gapop 60.0 , Gapext 60.0

Searched: 2002273 seqs, 358729299 residues

Word size : 0

Total number of hits satisfying chosen parameters: 2002273

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Listing first 45 summaries

Database : A_Geneseq_23Sep04:*

- 1: Geneseq1980s:*
- 2: Geneseq1990s:*
- 3: Geneseq2000s:*
- 4: Geneseq2001s:*
- 5: Geneseq2002s:*
- 6: Geneseq2003as:*
- 7: Geneseq2003bs:*
- 8: Geneseq2004s:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Match	Query Length	DB ID	Description
1	47	100.0	47	2	AAW97622 Human neu
2	47	100.0	48	5	AAW97622 Human neu
3	47	100.0	52	6	AAW97622 Human neu
4	47	100.0	157	2	AAW97622 Human neu
5	47	100.0	157	8	AAW97622 Human neu
6	47	100.0	360	2	AAW97622 Human neu
7	47	100.0	362	2	AAW97622 Human neu
8	47	100.0	502	5	AAW97622 Human neu
9	47	100.0	696	2	AAW97622 Human neu
10	47	100.0	696	5	AAW97622 Human neu
11	47	100.0	713	2	AAW97622 Human neu
12	47	100.0	713	5	AAW97622 Human neu
13	47	100.0	720	2	AAW97622 Human neu
14	47	100.0	720	5	AAW97622 Human neu
15	47	100.0	720	5	AAW97622 Human neu
16	47	100.0	720	8	AAW97622 Human neu
17	8	17.0	8	2	AAW97622 Human neu
18	8	17.0	8	5	AAW97622 Human neu
19	7	14.9	87	4	AAW97622 Human neu
20	7	14.9	156	3	AAW97622 Human neu
21	7	14.9	168	3	AAW97622 Human neu
22	7	14.9	204	8	AAW97622 Human neu
23	7	14.9	204	8	AAW97622 Human neu
24	7	14.9	207	3	AAW97622 Human neu
25	7	14.9	219	3	AAW97622 Human neu

26	7	14.9	237	3	AAW97622 Human neu
27	7	14.9	250	3	AAW97622 Human neu
28	7	14.9	349	3	AAW97622 Human neu
29	7	14.9	349	3	AAW97622 Human neu
30	7	14.9	349	7	AAW97622 Human neu
31	7	14.9	357	3	AAW97622 Human neu
32	7	14.9	357	3	AAW97622 Human neu
33	7	14.9	357	3	AAW97622 Human neu
34	7	14.9	377	7	AAW97622 Human neu
35	7	14.9	401	5	AAW97622 Human neu
36	7	14.9	401	5	AAW97622 Human neu
37	7	14.9	407	5	AAW97622 Human neu
38	7	14.9	407	5	AAW97622 Human neu
39	7	14.9	408	3	AAW97622 Human neu
40	7	14.9	408	3	AAW97622 Human neu
41	7	14.9	408	3	AAW97622 Human neu
42	7	14.9	450	6	AAW97622 Human neu
43	7	14.9	450	8	AAW97622 Human neu
44	7	14.9	452	3	AAW97622 Human neu
45	7	14.9	471	8	AAW97622 Human neu

ALIGNMENTS

RESULT 1
AAW97622
ID AAW97622 standard; protein; 47 AA.
XX AC
XX AAW97622;

10-MAY-1999 (first entry)

Human neuregulin related ligand NRG3 EGF-like domain.
Neuregulin related ligand; NRG3; hNRG3B1; human; ErbB4 receptor;
signal transduction; nervous system disorder; neurodegeneration;
neuropathy; therapy; diagnosis; epidermal growth factor; EGF;
immunoadhesin.

Homo sapiens.

WO9902681-A1.

21-JAN-1999.

30-JUN-1998; 98WO-US013411.

09-JUL-1997; 97US-0052019P.

24-JUL-1997; 97US-00899437.

(GETH) GENENTECH INC.

Godowski PJ, Mark MR, Zhang D;

WPI; 1999-120882/10.

New isolated neuregulin related ligand-3 - used to develop products for treating nervous system disorders, e.g. stroke, ischaemia, infection, malignancy, Alzheimer's disease or Down's syndrome.

Claim 30; Page 64; 101pp; English.

This is the epidermal growth factor (EGF)-like domain of human neuregulin related ligand NRG3 (see also AAW97618), a novel member of the EGF-like family of protein ligands that binds to the ErbB4 receptor and activates ErbB4 receptor tyrosine phosphorylation. The EGF-1 like domain of NRG3 is distinct from the EGF-like domains of NRG1 and NRG2. The invention provides human and murine polypeptides (see also AAW97617) that have at least 75% homology to the NRG3 EGF-like domain, as well as expression vectors, host cells and methods for the recombinant production of novel NRG3s. The NRG3 polypeptides and polynucleotides and can be used to enhance the survival, proliferation or differentiation of cells having

CC the ErbB4 receptor in vivo and in vitro. They can be used to prevent or
CC treat damage to a nerve or damage to other NRG3-expressing or NRG3-
CC responsive cells, e.g. brain, heart, or kidney cells. In particular, they
CC can be used to treat diseases which involve neural cell growth such as
CC demyelination, or damage or loss of glial cells (e.g. multiple
CC sclerosis). They can be used to treat patients whose nervous system has
CC been damaged by e.g. trauma, surgery, stroke, ischaemia, infection,
CC metabolic disease, nutritional deficiency, malignancy, or toxic agents.
CC NRG3 can also be used to treat motor neuron disorders such as amyotrophic
CC lateral sclerosis (Lou Gehrig's disease). Bell's palsy, conditions
CC involving spinal muscular atrophy or paralysis, neurodegenerative
CC disorders such as Alzheimer's disease, Parkinson's disease, epilepsy,
CC multiple sclerosis, Huntington's chorea, Down's syndrome, nerve deafness,
CC and Meniere's disease. They can also be used to treat neuropathies
CC associated with systemic disease including Charcot-Marie-Tooth disease, Refsum's
CC disease, abetalipoproteinemia, Tangier disease, Krabbe's disease,
CC metachromatic leukodystrophy, Fabry's disease and Dejerine-Sottas
CC syndrome, to treat disease of skeletal muscle or smooth muscle, such as
CC muscular dystrophy or diseases caused by skeletal or smooth muscle
CC wasting. The products can also be used for detection, diagnosis, for the
CC production of transgenic or knockout animals or for drug screening. A
CC claimed immunoadhesin comprises the human NRG3 EGF-like domain fused to
CC an immunoglobulin sequence

XX
XX
SQ Sequence 47 AA;

Query Match 100.0%; Score 47; DB 2; Length 47;
Best Local Similarity 100.0%; Pred. No. 3.5e-41;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFPCRDLDLAYCLNDGECFVIETLTGSHKHCKCKEGYQGVRCQDQL 47
|||||
DB 1 HFPCRDLDLAYCLNDGECFVIETLTGSHKHCKCKEGYQGVRCQDQL 47
|||||

RESULT 2
AAG66046
ID AAG66046 standard; peptide; 48 AA.
XX
AC AAG66046;
XX
XX
DT 27-FEB-2002 (first entry)
XX
DE Mouse NRG-3 EGF-like motif sequence.
XX
KW ErbB-4; neuregulin-4; NRG-4; pro-NRG-4; neuroprotective; vulnery;
KW cerebroprotective; vasotropic; antiparkinsonian; anticonvulsant;
KW cytostatic; nootropic; EGF; NRG-3.
XX
OS Mus musculus.
XX
XX WO200181540-A2.
XX
XX
PD 01-NOV-2001.
XX
XX 20-APR-2001; 2001WO-IL000371.
XX
XX 21-APR-2000; 2000US-00553769.
XX
XX (YEDA) YEDA RES & DEV CO LTD.
XX
XX Harari D, Yarden Y;
PI WPI; 2002-041398/05.
XX
DR WPI; 2002-041398/05.
XX
PT Novel ErbB-4 ligand, referred as neuregulin (NRG) -4 and polynucleotide
PT sequences encoding NRG-4, useful for upregulating or downregulating ErbB-
PT 4 receptor activity to treat Alzheimer's disease, stroke, gastric cancer.
XX
XX Disclosure; Fig 1c; 153pp; English.
XX
XX The invention relates to a novel ErbB-4 ligand, neuregulin-4 (NRG-4). NRG

CC -4 binds to mammalian ErbB-4 receptor and can be expressed by standard
CC recombinant methodology. Pharmaceutical compositions comprising NRG-4 are
CC useful for regulating an endogenous protein affecting ErbB-4 receptor
CC activity in vivo. They are also useful for treating or preventing a
CC disease condition or syndrome associated with dysregulation of an
CC endogenous protein affecting ErbB-4 receptor activity, e.g., amyotrophic
CC lateral sclerosis (Lou Gehrig's disease), Bell's palsy, spinal muscular
CC atrophy, brain trauma, stroke, ischemia, Alzheimer's disease, Parkinson's
CC disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's
CC syndrome, nerve deafness, neuropathy, muscular dystrophy, extramammary
CC paget's disease, gastric, pancreatic, prostate, breast and ovarian
CC cancer, cervical carcinoma, endometrial adenocarcinoma, pancreatic D
CC cells-somatostatinoma and Zollinger-Ellison syndrome. The agent comprised
CC in the pharmaceutical composition includes a polypeptide (e.g., a soluble
CC ligand binding domain of ErbB-4 i.e. IgB4; or a monoclonal, polyclonal,
CC humanized, single chain antibody or an immunoreactive derivative of an
CC antibody) capable of binding the endogenous protein affecting ErbB-4
CC receptor activity. Traceable synthetic/recombinant NRG-4-tagged molecules
CC can serve as a diagnostic tool in which cells binding NRG-4 can be
CC measured. Sequences AAG66044-53 represent the EGF-like motifs of various
CC growth factors

XX
XX
SQ Sequence 48 AA;

Query Match 100.0%; Score 47; DB 5; Length 48;
Best Local Similarity 100.0%; Pred. No. 3.6e-41;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFPCRDLDLAYCLNDGECFVIETLTGSHKHCKCKEGYQGVRCQDQL 47
|||||
DB 2 HFPCRDLDLAYCLNDGECFVIETLTGSHKHCKCKEGYQGVRCQDQL 48
|||||

RESULT 3
AAE36807
ID AAE36807 standard; protein; 52 AA.
XX
AC AAE36807;
XX
XX
DT 07-AUG-2003 (first entry)
XX
DE Human neuregulin 3 EGF-like domain.
XX
XX
KW Epidermal growth factor receptor; EGFR; therapy; psoriasis; carcinoma;
KW cancer; rhabdomyosarcoma; mesothelioma; melanoma; glioblastoma; human;
KW receptor; EGF; neuregulin 3.
XX
XX Homo sapiens.
XX
XX WO2003014159-A1.
XX
XX 20-FEB-2003.
XX
XX 05-AUG-2002; 2002WO-AU001042.
XX
XX 03-AUG-2001; 2001AU-00006827.
PR 03-AUG-2001; 2001AU-00006828.
PR 01-NOV-2001; 2001US-0335393P.
PR 01-NOV-2001; 2001US-0336560P.
PR 31-MAY-2002; 2002AU-00002731.
PR 11-JUN-2002; 2002US-0388171P.
XX
XX (CSIR) COMMONWEALTH SCI & IND RES ORG.
PA (BIOM-) BIOMOLECULAR RES INST LTD.
PA (HALL-) HALL INST MEDICAL RES WALTER & ELIZA.
PA (LUDW-) LUDWIG INST CANCER RES.
XX
XX Adams TE, Burgess AW, Elleman TC, Garrett TPJ, Jorissen RN;
PI Lou M, Lovrecz GO, McKern NM, Nice EC, Ward CW;
XX WPI; 2003-268181/26.
XX
XX Selecting or designing compounds that interact with or inhibit formation

PT of active dimers of the EGF receptor family, and useful for the
PT prevention and treatment of disorders, such as psoriasis and cancer of
PT the breast, brain or colon.
XX
XX Disclosure; Fig 2; 354pp; English.
XX
CC The invention relates to a method of selecting or designing a compound
CC that interacts with or inhibits the formation of active dimers of a
CC receptor of the epidermal growth factor receptor (EGFR) family. The
CC methods and compositions of the invention are useful for the prevention
CC and treatment of disorders associated with signalling by a molecule of
CC the EGFR family such as psoriasis and cancer of the pancreas, breast,
CC brain, colon, prostate, ovary, cervix, lung, head and neck, melanoma,
CC rhabdomyosarcoma, mesothelioma, squamous carcinomas of the skin and
CC glioblastomas. The present sequence is epidermal growth factor (EGF) like
CC domain of human heregulin 3 protein. This sequence is used to illustrate
CC the method of the invention
XX
XX Sequence 52 AA;

Query Match 100.0%; Score 47; DB 6; Length 52;
Best Local Similarity 100.0%; Pred. No. 3.9e-41;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 HFPCRDLDLAYCLNDGECFVIETLTGSHKCRCKEGYQGVRCQDFL 47
Db 2 HFPCRDLDLAYCLNDGECFVIETLTGSHKCRCKEGYQGVRCQDFL 48

RESULT 4
ID AAY05451 standard; protein; 157 AA.
AC AAY05451;
XX
XX 06-JUL-1999 (first entry)
DT Human heregulin-like factor sequence.
DE Human heregulin-like factor; HLF; cell growth regulator; diagnosis;
KW neural system disorder; cancer.
XX
XX Homo sapiens.
XX WO9857989-A1.
XX 23-DEC-1998.

XX 16-JUN-1998; 98WO-US012403.
XX 17-JUN-1997; 97US-0049942P.
XX (HUMA-) HUMAN GENOME SCI INC.
XX (GEOU) UNIV GEORGETOWN.
XX Young P, Ruben SM, King CR, Hijazi MM;
XX WPI: 1999-095327/08.
XX N-PSDB; AAX36423.

PT New isolated heregulin-like factor - used to develop products for the
PT diagnosis and treatment of disorders involving regulation of cell growth,
PT particularly cancers.
XX
XX Claim 17; Page 86-87; 118pp; English.

XX This sequence is the human heregulin-like factor (HLF) of the invention.
CC The HLF is involved in the regulation of cell growth. Detection of
CC different levels of expression of the HLF gene can be used for the
CC diagnosis of disorders, e.g. in the neural system. In particular,
CC detection of different levels of HLF gene expression in cells or body
CC fluid of an individual can be used for diagnosing cancer. The products
CC can also be used in the treatment of disorders involving abnormal levels

CC of HLF activity
XX
SQ Sequence 157 AA;

Query Match 100.0%; Score 47; DB 2; Length 157;
Best Local Similarity 100.0%; Pred. No. 1e-40;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 HFPCRDLDLAYCLNDGECFVIETLTGSHKCRCKEGYQGVRCQDFL 47
Db 31 HFPCRDLDLAYCLNDGECFVIETLTGSHKCRCKEGYQGVRCQDFL 77

RESULT 5
ID ADN48870 standard; protein; 157 AA.

XX AC ADN48870;
XX DT 15-JUL-2004 (first entry)
XX DE Human heregulin-like factor (HLF) protein.
XX KW HLF; heregulin-like factor; diagnosis; cancer; gene therapy; human.

XX OS Homo sapiens.
XX FH Key Location/Qualifiers
XX FT Domain 26..93
XX FT /note = EGF domain

XX PN US6727077-B1.
XX PD 27-APR-2004.
XX PF 16-JUN-1998; 98US-00097681.
XX PR 17-JUN-1997; 97US-0049492P.
XX (HUMA-) HUMAN GENOME SCI INC.
XX (GEOU) UNIV GEORGETOWN MEDICAL CENT.

XX PI Young PE, King CR, Hijazi M, Ruben SM;
XX WPI: 2004-338520/31.
XX DR N-PSDB; ADN48869.

XX PT New heregulin-like factor (HLF) nucleic acid or polypeptide, useful for
XX preparing a composition for diagnosing or treating cancer.

XX PS Claim 1; SEQ ID NO 2; 48pp; English.

XX The present invention relates to novel heregulin-like factor (HLF)
XX polypeptides and the encoding polynucleotides. The invention is useful
XX for preparing a composition for diagnosing and treating cancer. The
XX invention is also useful in gene therapy. The present sequence is human
XX heregulin-like factor (HLF) protein.

XX SQ Sequence 157 AA;

Query Match 100.0%; Score 47; DB 8; Length 157;
Best Local Similarity 100.0%; Pred. No. 1e-40;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFPCRDLDLAYCLNDGECFVIETLTGSHKCRCKEGYQGVRCQDFL 47
Db 31 HFPCRDLDLAYCLNDGECFVIETLTGSHKCRCKEGYQGVRCQDFL 77

RESULT 6
ID AAW97621 standard; protein; 360 AA.
XX

XX SQ Sequence 362 AA;
 Query Match 100.0%; Score 47; DB 2; Length 362;
 Best Local Similarity 100.0%; Pred. No. 2.1e-40;
 Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 HFPCRDLDLAYCLNDGECFVITLTGSHKHCRCKEGYQGVRCDOFL 47
 |||||
 Db 288 HFPCRDLDLAYCLNDGECFVITLTGSHKHCRCKEGYQGVRCDOFL 334
 |||||

RESULT 8
 ID ABB08776 standard; protein; 502 AA.
 AC ABB08776;
 XX 16-MAY-2002 (first entry)
 DT Human neuregulin 55 SEQ ID NO 2.
 XX Human; neuregulin 55; nervous system; development; neuropsychopathy;
 DE tumour; inflammation; immunological disease.
 KW Homo sapiens.
 OS CN1324826-A.
 XX 05-DEC-2001.
 PD 19-MAY-2000; 2000CN-00115761.
 PF 19-MAY-2000; 2000CN-00115761.
 PR (BODE-) BODE GENE DEV CO LTD SHANGHAI.
 PA Mao Y, Xie Y;
 XX WPI; 2002-217507/28.
 DR N-PSDB; ABL41244.
 XX New polypeptide human neuregulin 55 and polynucleotides for encoding
 PT same.
 PS Claim 1; Page 27-28 (Disclosure); 35pp; Chinese.

XX The invention relates to human neuregulin 55, polynucleotide for coding
 CC this polypeptide and a method for producing this polypeptide by using DNA
 CC recombination technique. The invention also discloses the method for
 CC curing several diseases, such as nervous system developmental diseases,
 CC neuropsychopathy, other nervous system diseases, development disturbance,
 CC tumours, inflammations and immunological disease by using said
 CC polypeptide. The invention also discloses an antagonist for resisting
 CC said polypeptide and its therapeutic action and also discloses the
 CC application of polynucleotide to coding this novel human neuregulin 55.
 CC The present sequence is that of human neuregulin 55
 XX Sequence 502 AA;
 Query Match 100.0%; Score 47; DB 5; Length 502;
 Best Local Similarity 100.0%; Pred. No. 2.8e-40;
 Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 HFPCRDLDLAYCLNDGECFVITLTGSHKHCRCKEGYQGVRCDOFL 47
 |||||
 Db 92 HFPCRDLDLAYCLNDGECFVITLTGSHKHCRCKEGYQGVRCDOFL 138
 |||||

RESULT 9
 ID AAW97619 standard; protein; 696 AA.
 XX AAW97619

AC AAW97619;
 XX 10-MAY-1999 (first entry)
 DT Human neuregulin related ligand NRG3 (splice variant).
 DE Human neuregulin related ligand NRG3; hNRG3B1; human; ErbB4 receptor;
 KW signal transduction; nervous system disorder; neurodegeneration;
 KW neuropathy; therapy; diagnosis; splice variant.
 XX Homo sapiens.
 OS
 FH Key Location/Qualifiers
 FT Domain 1..360
 FT /note= "extracellular domain, specifically claimed in
 FT Claim 5(a)"
 FT 66..91
 FT /note= "hydrophobic region"
 FT 101..284
 FT /note= "mucin-like Ser/Thr-rich region, contains sites
 FT for O-linked glycosylation"
 FT 285..354
 FT /note= "EGF-like domain"
 FT 356..394
 FT /note= "transmembrane domain"
 XX WO9902681-A1.
 PN 21-JAN-1999.
 PD 30-JUN-1998; 98WO-US013411.
 PF 09-JUL-1997; 97US-0052019P.
 PR 24-JUL-1997; 97US-00899437.
 XX (GETH) GENENTECH INC.
 PA Godowski PJ, Mark MR, Zhang D;
 PI WPI; 1999-120882/10.
 XX N-PSDB; AAX06989.
 DR New isolated neuregulin related ligand-3 - used to develop products for
 XX treating nervous system disorders, e.g. stroke, ischaemia, infection,
 XX malignancy, Alzheimer's disease or Down's syndrome.
 PT Example 1; Page 78-81; 101pp; English.
 PS This is the amino acid sequence of splice variant hNRG3B2 of human
 CC neuregulin related ligand NRG3, a novel member of the epidermal growth
 CC factor (EGF)-like family of protein ligands that binds to the ErbB4
 CC receptor, but not to the ErbB2 or ErbB3 receptor, and which activates
 CC ErbB4 receptor tyrosine phosphorylation. The sequence was deduced from
 CC the nucleotide sequence of a cDNA clone (see AAX06989) from a foetal
 CC brain library. hNRG3B2 lacks amino acids 529-552 of hNRG3B1 (see
 CC AAW97619) but retains the EGF-like domain and is expected to exhibit
 CC biological activity. The invention provides human and murine NRG3
 CC polypeptides (see AAW97617), expression vectors, host cells and methods
 CC for the recombinant production of NRG3s. The NRG3 polypeptides and
 CC polynucleotides and can be used to enhance the survival, proliferation or
 CC differentiation of cells having the ErbB4 receptor in vivo and in vitro.
 CC They can be used to prevent or treat damage to a nerve or damage to other
 CC NRG3-expressing or NRG3-responsive cells, e.g. brain, heart, or kidney
 CC cells. In particular, they can be used to treat diseases which involve
 CC neural cell growth such as demyelination, or damage or loss of glial
 CC cells (e.g. multiple sclerosis). They can be used to treat patients whose
 CC nervous system has been damaged by e.g. trauma, surgery, stroke,
 CC ischaemia, infection, metabolic disease, nutritional deficiency,
 CC malignancy, or toxic agents. NRG3 can also be used to treat motor neuron
 CC disorders such as amyotrophic lateral sclerosis (Lou Gehrig's disease),
 CC Bell's palsy, conditions involving spinal muscular atrophy or paralysis,
 CC neurodegenerative disorders such as Alzheimer's disease, Parkinson's
 CC disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's

CC syndrome, nerve deafness, and Meniere's disease. They can also be used to
CC treat neuropathies associated with systemic disease including post-polio
CC syndrome, hereditary neuropathies including Charcot-Marie-Tooth disease,
CC Refsum's disease, abetalipoproteinemia, Tangier disease, Krabbe's
CC disease, metachromatic leukodystrophy, Fabry's disease and Dejerine-
CC sotias syndrome, to treat disease of skeletal muscle of smooth muscle,
CC such as muscular dystrophy or diseases caused by skeletal or smooth
CC muscle wasting. The products can also be used for detection, diagnosis,
CC for the production of transgenic or knockout animals or for drug
CC screening
XX
SQ Sequence 696 AA;
Query Match 100.0%; Score 47; DB 2; Length 696;
Best Local Similarity 100.0%; Pred. No. 3.7e-40;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYGVRCDOFL 47
DB 286 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYGVRCDOFL 332
RESULT 10
ABG32080
ID ABG32080 standard; protein; 696 AA.
XX
AC ABG32080;
XX
DT 05-NOV-2002 (first entry)
XX
DE Novel human neuregulin related ligand NRG3B2.
XX
KW Neuregulin related ligand; NRG3; neuroprotective; cell therapy;
XX epidermal growth factor-like domain; EGF-like domain; Bell's palsy;
KW ErbB4 receptor detection; amyotrophic lateral sclerosis; paralysis;
KW Lou Gehrig's disease; spinal muscular atrophy; multiple sclerosis;
KW neurodegenerative disorder; Alzheimer's disease; Parkinson's disease;
KW epilepsy; Huntington's chorea; Down's syndrome; nerve deafness;
KW Meniere's disease; neuropathy; distal sensorimotor neuropathy;
KW autonomic neuropathy; hereditary neuropathy; Charcot-Marie-Tooth disease;
KW Refsum's disease; Abetalipoproteinemia; Tangier disease;
KW Krabbe's disease; Metachromatic leukodystrophy; Fabry's disease;
KW Dejerine-Scottas syndrome; human; NRG3B2.
XX
OS Homo sapiens.
XX
XX US2002082229-A1.
XX
XX 27-JUN-2002.
XX
XX 26-MAR-2001; 2001US-00817647.
XX
XX 24-JUL-1997; 97US-0053641P.
XX
XX 30-JUN-1998; 98US-00107979.
XX
XX (GETH) GENENTECH INC.
XX
XX Godowski PJ, Mark MR, Zhang D;
XX
XX WPI; 2002-617760/66.
XX
XX N-PSDB; ABK90730.
XX
XX A new neuregulin related ligand designated NRG3 has an epidermal growth
XX factor-like domain and binds to ErbB4 receptor, and is useful to prevent
XX or treat NRG3 associated disorders, particularly nerve damage.
XX
XX Example 1; Fig 4A-B; 60pp; English.
XX
XX The invention describes a polypeptide comprising an amino acid sequence
XX encoding an epidermal growth factor (EGF)-like domain, and having the
XX binding characteristics of neuregulin related ligand (NRG3). NRG3
XX polypeptide can be used to detect ErbB4 receptor in a mammalian tissue
XX sample, and also to prevent or treat disorders associated with NRG3 such
XX

CC as: amyotrophic lateral sclerosis (Lou Gehrig's disease), Bell's palsy
CC and various conditions involving spinal muscular atrophy or paralysis,
CC neurodegenerative disorders such as Alzheimer's disease, Parkinson's
CC disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's
CC Refsum's disease, abetalipoproteinemia, Tangier disease, Krabbe's
CC disease, metachromatic leukodystrophy, Fabry's disease and Dejerine-
CC sotias syndrome, to treat disease of skeletal muscle of smooth muscle,
CC such as muscular dystrophy or diseases caused by skeletal or smooth
CC muscle wasting. The products can also be used for detection, diagnosis,
CC for the production of transgenic or knockout animals or for drug
CC screening
XX
SQ Sequence 696 AA;
Query Match 100.0%; Score 47; DB 5; Length 696;
Best Local Similarity 100.0%; Pred. No. 3.7e-40;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYGVRCDOFL 47
DB 286 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYGVRCDOFL 332
RESULT 11
AAW97617
ID AAW97617 standard; protein; 713 AA.
XX
AC AAW97617;
XX
DT 10-MAY-1999 (first entry)
XX
DE Mouse neuregulin related ligand NRG3.
XX
KW Neuregulin related ligand; NRG3; mouse; ErbB4 receptor;
KW signal transduction; nervous system disorder; neurodegeneration;
KW neuropathy; therapy; diagnosis.
XX
XX Mus sp.
XX
XX Location/Qualifiers
FH Domain
FT 1..362 "extracellular domain, specifically claimed in
FT Claim 5(a)"
FT 66..91
FT Region /note= "hydrophobic region"
FT 105..286
FT Region /note= "mucin-like Ser/Thr-rich region, contains sites
FT for O-linked glycosylation"
FT 287..334
FT Domain /note= "EGF-like domain"
FT 363..385
FT Domain /note= "transmembrane domain"
XX
XX WO9902681-A1.
XX
XX 21-JAN-1999. 98WO-US013411.
XX
XX 30-JUN-1998;
XX
XX 09-JUL-1997; 97US-0052019P.
XX
XX 24-JUL-1997; 97US-00899437.
XX
XX (GETH) GENENTECH INC.
XX
XX Godowski PJ, Mark MR, Zhang D;
XX
XX WPI; 1999-120882/10.
XX
XX N-PSDB; AAX06987.
XX
XX New isolated neuregulin related ligand-3 - used to develop products for
XX treating nervous system disorders, e.g. stroke, ischaemia, infection,
XX malignancy, Alzheimer's disease or Down's syndrome.
XX

AC ABG32065;
 XX
 DT 05-NOV-2002 (first entry)
 XX
 DE Human novel neuregulin related ligand NRG3B1.
 XX
 KW Neuregulin related ligand; NRG3; neuroprotective; cell therapy;
 KW epidermal growth factor-like domain; EGF-like domain; Bell's palsy;
 KW ErbB4 receptor detection; amyotrophic lateral sclerosis; paralysis;
 KW Lou Gehrig's disease; spinal muscular atrophy; multiple sclerosis;
 KW neurodegenerative disorder; Alzheimer's disease; Parkinson's disease;
 KW epilepsy; Huntingdon's chorea; Down's syndrome; nerve deafness;
 KW Meniere's disease; neuropathy; distal sensorimotor neuropathy;
 KW autonomic neuropathy; hereditary neuropathy; Charcot-Marie-Tooth disease;
 KW Refsum's disease; Abetalipoproteinaemia; Tangier disease;
 KW Krabbe's disease; Metachromatic leukodystrophy; Fabry's disease;
 KW Dejerine-Scottas syndrome; human; gene; ss; NRG3B1.
 XX
 OS Homo sapiens.
 XX
 XX Key Location/Qualifiers
 FH Domain 1..360
 FT /label= Extracellular domain
 FT /note= "Specifically claimed in claim 5"
 FT 286..332
 FT /label= EGF-like domain
 FT /note= "Extracellular epidermal growth factor-like
 FT domain"
 XX
 PN US2002082229-A1.
 XX
 XX 27-JUN-2002.
 XX
 XX 26-MAR-2001; 2001US-00817647.
 XX
 XX 24-JUL-1997; 97US-0053641P.
 PR 30-JUN-1998; 98US-00107979.
 XX
 XX (GETH) GENENTECH INC.
 XX
 XX Godowski PJ, Mark MR, Zhang D;
 PI
 XX WPI; 2002-617760/66.
 DR N-PSDB; ABK90731.
 XX
 XX A new neuregulin related ligand designated NRG3 has an epidermal growth
 PT factor-like domain and binds to ErbB4 receptor, and is useful to prevent
 PT or treat NRG3 associated disorders, particularly nerve damage.
 XX
 XX Example 1; Fig 4A-B; 60pp; English.
 PS
 XX The invention describes a polypeptide comprising an amino acid sequence
 CC encoding an epidermal growth factor (EGF)-like domain, and having the
 CC binding characteristics of neuregulin related ligand (NRG3). NRG3
 CC polypeptide can be used to detect ErbB4 receptor in a mammalian tissue
 CC sample, and also to prevent or treat disorders associated with NRG3 such
 CC as: amyotrophic lateral sclerosis (Lou Gehrig's disease), Bell's palsy
 CC and various conditions involving spinal muscular atrophy or paralysis,
 CC neurodegenerative disorders such as Alzheimer's disease, Parkinson's
 CC disease, epilepsy, multiple sclerosis, Huntingdon's chorea, Down's
 CC syndrome, nerve deafness, Meniere's disease, neuropathy such as distal
 CC sensorimotor neuropathy or autonomic neuropathy, hereditary neuropathies
 CC such as Charcot-Marie-Tooth disease, Refsum's disease,
 CC Abetalipoproteinaemia, Tangier disease, Krabbe's disease, Metachromatic
 CC leukodystrophy, Fabry's disease and Dejerine-Scottas syndrome. This is
 CC the amino acid sequence of the novel human neuregulin related ligand
 CC (NRG3B1)
 XX
 SQ Sequence 720 AA;

Query Match 100.0%; Score 47; DB 5; Length 720;
 Best Local Similarity 100.0%; Pred. No. 3.8e-40;
 Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCCKEGYQGVRCDOFL 47
 |||||
 Db 286 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCCKEGYQGVRCDOFL 332
 |||||

Search completed: November 2, 2004, 13:42:10
 Job time : 159 secs

GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: November 2, 2004, 13:11:24 ; Search time 193 Seconds
(without alignments)
140.117 Million cell updates/sec

Title: US-09-107-979-4

Perfect score: 277

Sequence: 1 HFKPCRDKLAYCLNDGECE.....SHKHCRCKEGVGVRCDQFL 47

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 1825181 seqs, 575374646 residues

Total number of hits satisfying chosen parameters: 1825181

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : UniProt_02.*

1: uniprot_sprot.*

2: uniprot_trembl.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB	ID	Description
1	277	100.0	713	1	NRG3 MOUSE	O35181 mus musculus
2	277	100.0	720	1	NRG3 HUMAN	P56975 homo sapien
3	126.5	45.7	677	1	NRG1_XENLA	O33383 xenopus lae
4	113.5	41.0	394	2	O6TGF9	Q6c9k9 oryctolagus
5	113.5	41.0	394	2	AAR00250	AAR00250 oryctolagus
6	113.5	41.0	461	2	O35947	O35947 mesocricetu
7	113.5	41.0	462	2	Q7RTW1	Q7rtw1 homo sapien
8	113.5	41.0	639	1	NRG1 HUMAN	O02297 h pro-neure
9	113.5	41.0	640	2	Q7RTV8	Q7rtv8 homo sapien
10	111.5	40.3	298	2	Q9ESA9	Q9esa9 rattus norv
11	111.5	40.3	695	2	Q9ESB0	Q9esb0 rattus norv
12	110	39.7	115	1	NRG4 MOUSE	Q9wtx4 mus musculus
13	109	39.4	115	1	NRG4 HUMAN	Q8wg1l homo sapien
14	104.5	37.7	241	2	O6PK61	O6pk61 homo sapien
15	104.5	37.7	241	2	Q7RTW0	Q7rtw0 homo sapien
16	104.5	37.7	241	2	Q07112	Q07112 bos taurus
17	104.5	37.7	241	2	AAR06492	AAR06492 homo sapi
18	104.5	37.7	296	1	SMDF HUMAN	Q15491 homo sapien
19	104.5	37.7	296	2	O6ICV5	O6icv5 homo sapien
20	104.5	37.7	296	2	Q7RTW2	Q7rtw2 homo sapien
21	104.5	37.7	296	2	Q961B3	Q961b3 homo sapien
22	104.5	37.7	296	2	CAG329284	CAG329284 homo sapi
23	104.5	37.7	422	2	Q7RTV9	Q7rtv9 homo sapien
24	104.5	37.7	637	2	Q7RTW3	Q7rtw3 homo sapien
25	104.5	37.7	645	2	Q7RTW4	Q7rtw4 homo sapien
26	104	37.7	756	1	NRG2 MOUSE	P56974 mus musculus
27	103.5	37.4	76	2	O810X0	O810x0 mus musculus
28	103.5	37.4	296	2	Q8BX76	Q8bx76 mus musculus
29	103.5	37.4	645	2	O6DR98	O6dr98 mus musculus
30	103.5	37.4	700	2	O6DR99	O6dr99 mus musculus
31	102.5	37.0	111	2	Q9ESA8	Q9esa8 rattus norv

32	102.5	37.0	136	2	Q9ESA7	Q9esa7 rattus norv
33	102.5	37.0	256	2	Q9ESA6	Q9esa6 rattus norv
34	102.5	37.0	317	2	Q9ESA3	Q9esa3 rattus norv
35	102.5	37.0	323	2	Q9ESA2	Q9esa2 rattus norv
36	102.5	37.0	342	2	Q9ESAL	Q9esal rattus norv
37	102.5	37.0	662	1	NRG1_RAT	P43322 r pro-neure
38	102.5	37.0	700	2	Q9ESB1	Q9esb1 rattus norv
39	102.5	37.0	782	2	Q9ESA5	Q9esa5 rattus norv
40	99	35.7	89	2	Q91M20	Q91m20 lumpy skin
41	98.5	35.6	602	1	NRG1_CHICK	Q05199 gallus gall
42	98	35.4	797	2	Q7QIQ6	Q7qiq6 anopheles g
43	97	35.0	54	2	O810X1	O810x1 mus musculus
44	92.5	33.4	2192	2	O01768	O01768 caenorhabdi
45	91.5	33.0	1213	1	JAG3_BRARE	Q90y54 brachydanio

ALIGNMENTS

RESULT 1
NRG3_MOUSE
ID_NRG3_MOUSE STANDARD; PRT; 713 AA.
AC O35181;
DT 16-OCT-2001 (Rel. 40, Created)
DT 16-OCT-2001 (Rel. 40, Last sequence update)
DT 05-JUL-2004 (Rel. 44, Last annotation update)
DE Pro-neuregulin-3 precursor (Pro-NRG3) [Contains: Neuregulin-3 (NRG-3)].
GN Name=Nrg3;
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Brain;
RX MEDLINE=97420720; PubMed=92751512;
RA Zhang D., Sliwkowski M.X., Mark M., Frantz G., Akita R., Sun Y., Hillan K., Crowley C., Brush J., Godowski P.J.;
RT "Neuregulin-3 (NRG3): a novel neural tissue-enriched protein that binds and activates ErbB4";
RL Proc. Natl. Acad. Sci. U.S.A. 94:9562-9567(1997).
CC -!- FUNCTION: Direct ligand for the ERBB4 tyrosine kinase receptor. Binding results in ligand-stimulated tyrosine phosphorylation and activation of the receptor. Does not bind to the EGF receptor, ERBB2 or ERBB3 receptors.
CC -!- SUBCELLULAR LOCATION: Exists as an type I membrane protein and as a proteolytically released soluble growth factor form. The membrane-bound form does not seem to be active (By similarity).
CC -!- TISSUE SPECIFICITY: Expressed in sympathetic, motor, and sensory neurons.
CC -!- DEVELOPMENTAL STAGE: Detected as early as 11 dpc. At 13 dpc detected mainly in the nervous system. At 16 dpc, detected in the brain, spinal cord, trigeminal, vestibular-cochlear, and spinal ganglia. In adults, expressed in spinal cord, and numerous brain regions.
CC -!- DOMAIN: The cytoplasmic domain may be involved in the regulation of trafficking and proteolytic processing. Regulation of the proteolytic processing involves initial intracellular domain dimerization (By similarity).
CC -!- DOMAIN: ERBB receptor binding is elicited entirely by the EGF-like domain (By similarity).
CC -!- PTM: Proteolytic cleavage close to the plasma membrane on the external face leads to the release of the soluble growth factor form (By similarity).
CC -!- PTM: Extensive glycosylation precedes the proteolytic cleavage (By similarity).
CC -!- SIMILARITY: Belongs to the neuregulin family.
CC -!- SIMILARITY: Contains 1 EGF-like domain.

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CC EMBL; AF010130; AAB70914.1; -.
CC PIR; T44447; T44447.
CC HSSP; P01133; 1JL9.
CC MGD; MGI:1097165; Nrg3.
CC GO; GO:0005515; F:protein binding; IPI.
CC GO; GO:0007243; F:protein kinase cascade; IDA.
CC InterPro; IPR000742; EGF 2.
CC InterPro; IPR006209; EGF-like.
CC InterPro; IPR002154; Neuregulin.
CC Pfam; PF00008; EGF; 1.
CC Pfam; PF02158; Neuregulin; 1.
CC PROSITE; PS00022; EGF_1; 1.
CC PROSITE; PS01186; EGF_2; 1.
CC PROSITE; PS00026; EGF_3; 1.
CC EGF-like domain; Growth factor; Multigene family; Transmembrane.
KW EGF-like domain; Growth factor; Multigene family; Transmembrane.
FT CHAIN 1 713 Pro-neuregulin-3, membrane-bound form.
FT CHAIN 1 361 Neuregulin-3.
FT DOMAIN 1 362 Extracellular (Potential).
FT TRANSMEM 363 383 Internal signal sequence (Potential).
FT DOMAIN 384 713 Cytoplasmic (Potential).
FT DOMAIN 105 287 Ser/Thr-rich.
FT DOMAIN 288 331 EGF-like.
FT DOMAIN 13 21 Poly-Ala.
FT DOMAIN 26 34 Poly-Ala.
FT DOMAIN 127 135 Poly-Ala.
FT DOMAIN 250 253 Poly-Ala.
FT DOMAIN 254 263 Poly-Ser.
FT DOMAIN 264 267 Poly-Thr.
FT DISULFID 292 306 By similarity.
FT DISULFID 300 319 By similarity.
FT DISULFID 321 330 By similarity.
SQ SEQUENCE 713 AA; 77369 MW; 9F7D1D5E7FC8DCF0 CRC64;

Query Match 100.0%; Score 277; DB 1; Length 713;
Best Local Similarity 100.0%; Pred. No. 1e-25; Indels 0; Gaps 0;
Matches 47; Conservative 0; Mismatches 0;

QY 1 HFPCPRDKLAYCLNDGECFVIETLTGSHKCRCKEGYQGVRCQDFL 47
DB 288 HFPCPRDKLAYCLNDGECFVIETLTGSHKCRCKEGYQGVRCQDFL 334

RESULT 2
NRG3 HUMAN STANDARD; PRT; 720 AA.
AC P56975;
DT 16-OCT-2001 (Rel. 40, Created)
DT 16-OCT-2001 (Rel. 40, Last sequence update)
DT 05-JUL-2004 (Rel. 44, Last annotation update)
DE Pro-neuregulin-3 precursor (Pro-NRG3) [Contains: Neuregulin-3 (NRG-3)].
DE Name=NRG3;
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OK NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Fetal brain;
EX MEDLINE=97420720; PubMed=9275162;
RA Zhang D., Sliwkowski M.X., Mark M., Prantz G., Akita R., Sun Y.,
RA Hillan K., Crowley C., Brush J., Godowski P.J.;
RT "Neuregulin-3 (NRG3): a novel neural tissue-enriched protein that binds and activates ErbB4.";
RL Proc. Natl. Acad. Sci. U.S.A. 94:9562-9567(1997).
CC -!- FUNCTION: Direct ligand for the ERBB4 tyrosine kinase receptor.
CC Binding results in ligand-stimulated tyrosine phosphorylation and activation of the receptor. Does not bind to the EGF receptor,

```

```

CC ERBB2 or ERBB3 receptors.
CC -!- SUBCELLULAR LOCATION: Exists as an type I membrane protein and as a proteolytically released soluble growth factor form. The membrane-bound form does not seem to be active (By similarity).
CC -!- TISSUE SPECIFICITY: Highly expressed in most regions of the brain with the exception of corpus callosum. Expressed at lower level in testis. Not detected in heart, placenta, lung, liver, skeletal muscle, kidney, pancreas, spleen, thymus, prostate, ovary, small intestine, colon and peripheral blood leukocytes.
CC -!- DOMAIN: The cytoplasmic domain may be involved in the regulation of trafficking and proteolytic processing. Regulation of the proteolytic processing involves initial intracellular domain dimerization (By similarity).
CC -!- DOMAIN: ERBB receptor binding is elicited entirely by the EGF-like domain (By similarity).
CC -!- PTM: Proteolytic cleavage close to the plasma membrane on the external face leads to the release of the soluble growth factor form (By similarity).
CC -!- PTM: Extensive glycosylation precedes the proteolytic cleavage (By similarity).
CC -!- SIMILARITY: Belongs to the neuregulin family.
CC -!- SIMILARITY: Contains 1 EGF-like domain.
CC HSSP; P01133; 1JL9.
CC MIM; 605533; -.
CC GO; GO:0005576; C:extracellular; NAS.
CC GO; GO:0005887; C:integral to plasma membrane; NAS.
CC GO; GO:0008083; F:growth factor activity; NAS.
CC GO; GO:0030297; F:transmembrane receptor protein tyrosine kin. . . ; NAS.
CC GO; GO:0001558; P:regulation of cell growth; NAS.
CC GO; GO:0007170; P:transmembrane receptor protein tyrosine kin. . . ; NAS.
CC InterPro; IPR000742; EGF 2.
CC InterPro; IPR006209; EGF-like.
CC InterPro; IPR002154; IEGF.
CC InterPro; IPR002154; Neuregulin.
CC Pfam; PF00008; EGF; 1.
CC Pfam; PF02158; Neuregulin; 1.
CC SMART; SM00181; EGF; 1.
CC PROSITE; PS00022; EGF_1; 1.
CC PROSITE; PS01186; EGF_2; 1.
CC PROSITE; PS00026; EGF_3; 1.
CC EGF-like domain; Growth factor; Multigene family; Transmembrane.
FT CHAIN 1 720 Pro-neuregulin-3, membrane-bound form.
FT CHAIN 1 359 Neuregulin-3.
FT DOMAIN 1 360 Extracellular (Potential).
FT TRANSMEM 361 381 Internal signal sequence (Potential).
FT DOMAIN 382 720 Cytoplasmic (Potential).
FT DOMAIN 105 285 Ser/Thr-rich.
FT DOMAIN 286 329 EGF-like.
FT DOMAIN 5 8 Poly-Ala.
FT DOMAIN 13 21 Poly-Ala.
FT DOMAIN 26 34 Poly-Ala.
FT DOMAIN 127 135 Poly-Thr.
FT DOMAIN 252 260 Poly-Ser.
FT DOMAIN 262 265 Poly-Thr.
FT DISULFID 290 304 By similarity.
FT DISULFID 298 317 By similarity.
FT DISULFID 319 328 By similarity.
SQ SEQUENCE 720 AA; 77900 MW; A4D6F10DDB95A693 CRC64;

Query Match 100.0%; Score 277; DB 1; Length 720;
Best Local Similarity 100.0%; Pred. No. 1e-25; Indels 0; Gaps 0;
Matches 47; Conservative 0; Mismatches 0;

QY 1 HFPCPRDKLAYCLNDGECFVIETLTGSHKCRCKEGYQGVRCQDFL 47
DB 286 HFPCPRDKLAYCLNDGECFVIETLTGSHKCRCKEGYQGVRCQDFL 332

RESULT 3
NRG1 XENLA STANDARD; PRT; 677 AA.
ID NRG1_XENLA
AC O93383; Q9W6N0;

```

16-OCT-2001 (Rel. 40, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
05-JUL-2004 (Rel. 44, Last annotation update)
DE Pro-neuregulin-1 precursor (Pro-NRG1) [Contains: Neuregulin-1].
GN Name=NRG1;
OS Xenopus laevis (African clawed frog).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Amphibia; Batrachia; Anura; Mesobatrachia; Pipoidae; Pipidae;
OC Xenopodinae; Xenopus.
OX NCBI_TaxID=8355;
RN [1]
RP SEQUENCE FROM N.A. (ISOFORM ALPHA), AND ALTERNATIVE SPLICING.
RX MEDLINE=98352126; PubMed=9685595;
RA Yang J.F., Zhou H., Pun S., Ip N.Y., Peng H.B., Ts'ao K.W.K.;
RT "Cloning of cDNAs encoding xenopus neuregulin: expression in myotomal
RT muscle during embryo development.";
RL Brain Res. Mol. Brain Res. 58:59-73 (1998).
RN [2]
RP SEQUENCE FROM N.A. (ISOFORM CRD).
RX MEDLINE=99316087; PubMed=10383827;
RA Yang J.F., Zhou H., Choi R.C., Ip N.Y., Peng H.B., Ts'ao K.W.K.;
RT "A cysteine-rich form of Xenopus neuregulin induces the expression of
RT acetylcholine receptors in cultured myotubes.";
RL Mol. Cell. Neurosci. 13:415-429 (1999).
CC -!- FUNCTION: Direct ligand for the ERBB tyrosine kinase receptors.
CC Induces expression of acetylcholine receptor in synaptic nuclei.
CC -!- SUBCELLULAR LOCATION: Exists as a type I membrane protein and as a
CC proteolytically released soluble growth factor form. The membrane-
CC bound form does not seem to be active (By similarity).
CC -!- ALTERNATIVE PRODUCTS:
CC Event=Alternative splicing; Named isoforms=2;
CC Comment=Additional isoforms seem to exist. Isoforms have alpha-
CC or beta-type EGF-like domains;
CC Name=Alpha1;
CC IsoId=093383-1; Sequence=Displayed;
CC Name=CRD; Synonyms=CRD-NRG1, Cysteine-rich domain;
CC IsoId=093383-2; Sequence=VSP_003449, VSP_003450;
CC -!- TISSUE SPECIFICITY: Isoform alpha1 is expressed in brain and
CC muscle. Isoform CRD is expressed in brain and spinal cord, but at
CC very low level in muscle.
CC -!- DEVELOPMENTAL STAGE: Strong expression in developing brain and
CC spinal cord of the embryo. Also expressed in the myotomal muscle.
CC -!- DOMAIN: The cytoplasmic domain may be involved in the regulation
CC of trafficking and proteolytic processing. Regulation of the
CC proteolytic processing involves initial intracellular domain
CC dimerization (By similarity).
CC -!- DOMAIN: ERBB receptor binding is elicited entirely by the EGF-like
CC domain.
CC -!- PTM: Proteolytic cleavage close to the plasma membrane on the
CC external face leads to the release of the soluble growth factor
CC form.
CC -!- PTM: Extensive glycosylation precedes the proteolytic cleavage (By
CC similarity).
CC -!- SIMILARITY: Belongs to the neuregulin family.
CC -!- SIMILARITY: Contains 1 EGF-like domain.
CC -!- SIMILARITY: Contains 1 immunoglobulin-like C2-type domain.
CC
CC This SWISS-PROT entry is copyright. It is produced through a collaboration
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CC use by non-profit institutions as long as its content is in no way
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CC
CC -----
DR ENBL; AF076618; AAC26804.1; -;
DR EMBL; AF142632; AAD33893.1; -;
DR HSSP; Q12780; 1HRE.
DR InterPro; IPR000742; EGF_2
DR InterPro; IPR006209; EGF-like.
DR InterPro; IPR007110; Ig-like.
DR InterPro; IPR002154; Neuregulin.
DR Pfam; PF00008; EGF; 1.

DR	Pfam; PF00047; ig; 1.	DR	HSP; Q12780; 1HRE.
DR	Pfam; PF02158; Neuregulin; 1.	DR	GO; GO:0005102; F:receptor binding; IEA.
DR	PRINTS; PR01089; NEUREGULIN.	DR	GO; GO:0009790; P:embryonic development; IEA.
DR	SMART; SM00181; EGF; 1.	DR	InterPro; IPR00742; EGF_2.
DR	SMART; SM00409; IG; 1.	DR	InterPro; IPR006209; EGF like.
DR	SMART; SM00408; IGC2; 1.	DR	InterPro; IPR006210; IEGF.
DR	PROSITE; PS00022; EGF_1; 1.	DR	InterPro; IPR007110; IG-like.
DR	PROSITE; PS01186; EGF_2; 1.	DR	InterPro; IPR003598; IG_C2.
DR	PROSITE; PS50026; EGF_3; 1.	DR	InterPro; IPR002154; Neuregulin.
DR	PROSITE; PS50835; IG_LIKE; 1.	DR	Pfam; PF00008; EGF; 1.
KW	EGF-like domain.	DR	Pfam; PF00047; ig; 1.
FT	NON_TER 1	DR	Pfam; PF02158; Neuregulin; 1.
FT	NON_TER 394	DR	PRINTS; PR01089; NEUREGULIN.
FT	NON_TER 394	DR	SMART; SM00181; EGF; 1.
SQ	SEQUENCE 394 AA; 42980 MW; C183EE80927443F9 CRC64;	DR	SMART; SM00408; IGC2; 1.
Query Match	41.0%; Score 113.5; DB 2; Length 394;	DR	PROSITE; PS00022; EGF_1; 1.
Best Local Similarity	34.8%; Pred. No. 1e-05;	DR	PROSITE; PS01186; EGF_2; 1.
Matches	16; Conservative 14; Mismatches 15; Indels 1; Gaps 1;	DR	PROSITE; PS50026; EGF_3; 1.
QY	1 HFKPCRDKLAYCLNDGECFVIETLTGSHKH-CRCKEGYQGVRCDDQ 45	DR	PROSITE; PS50835; IG_LIKE; 1.
Db	169 HLKCAEKEKTCFVNGGECFVKWDLNPSRYLCKCPGFTGARCTE 214	KW	EGF-like domain.
RESULT 5		SQ	SEQUENCE 461 AA; 50890 MW; 935C9560F7148336 CRC64;
ID	AAR00250 PRELIMINARY; PRT; 394 AA.	Query Match	41.0%; Score 113.5; DB 2; Length 461;
AC	AAR00250;	Best Local Similarity	34.8%; Pred. No. 1.2e-05;
DT	02-MAR-2004 (TrEMBLrel. 27, Created)	Matches	16; Conservative 14; Mismatches 15; Indels 1; Gaps 1;
DT	02-MAR-2004 (TrEMBLrel. 27, Last sequence update)	QY	1 HFKPCRDKLAYCLNDGECFVIETLTGSHKH-CRCKEGYQGVRCDDQ 45
DT	02-MAR-2004 (TrEMBLrel. 27, Last annotation update)	Db	178 HLKCAEKEKTCFVNGGECFVKWDLNPSRYLCKCPGFTGARCTE 223
DE	Neuregulin 1 alpha isoform (Fragment).	RESULT 7	
OS	Oryctolagus cuniculus (Rabbit).	Q7RTW1	
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;	ID	Q7RTW1 PRELIMINARY; PRT; 462 AA.
OC	Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.	AC	Q7RTW1;
OX	NCBI_TaxID=9986;	DT	01-MAR-2004 (TrEMBLrel. 26, Created)
RP	SEQUENCE FROM N.A.	DT	01-MAR-2004 (TrEMBLrel. 26, Last sequence update)
RA	Hendrickx J.;	DT	01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
RL	Submitted (SEP-2003) to the EMBL/GenBank/DBJ databases.	DE	Neuregulin 1 isoform ndf43.
RL	EMBL; AY421758; AAR00250.1; -	GN	Name=NRG1;
FT	NON_TER 1	OS	Homo sapiens (Human).
FT	NON_TER 394	OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
FT	NON_TER 394	OC	Mammalia; Eutheria; Primates; Catarrhini; Homnidae; Homo.
SQ	SEQUENCE 394 AA; 42980 MW; C183EE80927443F9 CRC64;	OX	NCBI_TaxID=9606;
Query Match	41.0%; Score 113.5; DB 2; Length 394;	RN	[1]
Best Local Similarity	34.8%; Pred. No. 1e-05;	SEQUENCE FROM N.A.	
Matches	16; Conservative 14; Mismatches 15; Indels 1; Gaps 1;	RX	PubMed=12145742;
QY	1 HFKPCRDKLAYCLNDGECFVIETLTGSHKH-CRCKEGYQGVRCDDQ 45	RA	Stefansson H., Sigurdsson E., Steinhorsdottir V., Bjornsdottir S.,
Db	169 HLKCAEKEKTCFVNGGECFVKWDLNPSRYLCKCPGFTGARCTE 214	RA	Sigmundsson T., Ghosh S., Brynjolfsson J., Gunnarsdottir S.,
RESULT 6		RA	Ivarsson O., Chou T.T., Hjaltason O., Birgisdottir B., Jonsson H.,
ID	O35947 PRELIMINARY; PRT; 461 AA.	RA	Gudnadottir V.G., Gudmundsdottir E., Bjornsson A., Ingvarsson B.,
AC	O35947;	RA	Ingason A., Sigfusson S., Hardardottir H., Harvey R.P., Brunner D.,
DT	01-JAN-1998 (TrEMBLrel. 05, Created)	RA	Mutel V., Gonzalo A., Lemke G., Sainz J., Johannesson G.,
DT	01-JAN-1998 (TrEMBLrel. 05, Last sequence update)	RA	Andresson T., Gudbjartsson D., Manolescu A., Frigge M.L., Gurney M.E.,
DT	01-MAR-2004 (TrEMBLrel. 26, Last annotation update)	RA	Kong A., Gulcher J.R., Petursson H., Stefansson K.;
DE	Neuregulin.	RT	"Neuregulin 1 and Susceptibility to Schizophrenia.;"
OS	Mesocricetus auratus (Golden hamster).	RL	Am. J. Hum. Genet. 71:0-0(2002).
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;	CC	-1- MISCELLANEOUS: The sequence shown here is derived from an
OC	Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Cricetinae;	CC	EMBL/GenBank/DBJ third party annotation (TPA) entry.
OC	Mesocricetus	CC	EMBL; BK000383; DAA00045.1; -
OX	NCBI_TaxID=10036;	DR	GO; GO:0005102; F:receptor binding; IEA.
RN	[1]	DR	GO; GO:0009790; P:embryonic development; IEA.
RP	SEQUENCE FROM N.A.	DR	InterPro; IPR000742; EGF_2.
RA	Velasco J.A., Feijoo E., Avila M.A., Notario V.;	DR	InterPro; IPR006209; EGF-like.
RA	Submitted (APR-1997) to the EMBL/GenBank/DBJ databases.	DR	InterPro; IPR007110; IG-like.
CC	-1- SIMILARITY: Contains 1 EGF-like domain.	DR	InterPro; IPR002154; Neuregulin.
DR	EMBL; U96612; AAB71812.1; -	DR	Pfam; PF00008; EGF; 1.

Query Match 41.0%; Score 113.5; DB 1; Length 639;
Best Local Similarity 34.8%; Pred. No. 1.7e-05;
Matches 16; Conservative 14; Mismatches 15; Indels 1; Gaps 1;

VA NCET_{parent} [1]
PN [1]

OX

OX

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RP SEQUENCE FROM N.A.
RC STRAIN=BDIX;
RA Carroll S.L., Anderson K.D., Frohnert P.W.;
RL Submitted (OCT-1999) to the EMBL/GenBank/DBJ databases.
CC -!- SIMILARITY: Contains 1 EGF-like domain.
DR EMBL; AF194440; AAG28429.1; -.
DR GO; GO:0005102; P:receptor binding; IEA.
DR GO; GO:0009790; P:embryonic development; IEA.
DR InterPro; IPR000742; EGF_2.
DR InterPro; IPR006209; EGF_like.
DR InterPro; IPR002114; HPr_Serp_S.
DR InterPro; IPR006210; IEGF.
DR InterPro; IPR002154; Neuregulin.
DR Pfam; PF00008; EGF; 1.
DR PRINTS; PR01089; NEUREGULIN.
DR SMART; SM00181; EGF; 1.
DR PROSITE; PS00022; EGF_1; 1.
DR PROSITE; PS01186; EGF_2; 1.
DR PROSITE; PS00026; EGF_3; 1.
DR PROSITE; PS00589; PTS_HPR_SER; UNKNOWN_1.
KW EGF-like domain.
FT NON_TER 298 298
FT NON_TER 298 298
SQ SEQUENCE 298 AA; 32851 MW; BD76F014C2B33026 CRC64;

Query Match 40.3%; Score 111.5; DB 2; Length 298;
Best Local Similarity 34.8%; Pred. No. 1.4e-05;
Matches 16; Conservative 13; Mismatches 16; Indels 1; Gaps 1;

QY 1 HFKECRDKLAYLNDGECFVIEITGSHKH-CRCKEGYQGVRCDO 45
Db 48 HLIKAEKERTFCVNGGECFTVKDLSNPSRYLCKQPGFTGARTCE 93

RESULT 11
Q9ESB0
ID Q9ESB0 PRELIMINARY; PRT; 695 AA.
AC Q9ESB0;
DT 01-MAR-2001 (TrEMBLrel. 16, Created)
DT 01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
DT 01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE SMDF neuregulin alpha 2a.
GN Name=Nrg1;
OS Rattus norvegicus (Rat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
OX NCBI_TaxID=10116;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=BDIX;
RA Carroll S.L., Anderson K.D., Frohnert P.W.;
RL Submitted (OCT-1999) to the EMBL/GenBank/DBJ databases.
CC -!- SIMILARITY: Contains 1 EGF-like domain.
DR EMBL; AF194439; AAG28428.1; -.
DR HSSP; Q12780; 1HRE.
DR GO; GO:0005102; P:receptor binding; IEA.
DR GO; GO:0009790; P:embryonic development; IEA.
DR InterPro; IPR000742; EGF_2.
DR InterPro; IPR006209; EGF_like.
DR InterPro; IPR002114; HPr_Serp_S.
DR InterPro; IPR006210; IEGF.
DR InterPro; IPR002154; Neuregulin.
DR Pfam; PF00008; EGF; 1.
DR PRINTS; PR01089; NEUREGULIN.
DR SMART; SM00181; EGF; 1.
DR PROSITE; PS00022; EGF_1; 1.
DR PROSITE; PS01186; EGF_2; 1.
DR PROSITE; PS00026; EGF_3; 1.
DR PROSITE; PS00589; PTS_HPR_SER; UNKNOWN_1.
KW EGF-like domain.
FT NON_TER 298 298
FT NON_TER 298 298
SQ SEQUENCE 695 AA; 75646 MW; 5277F2CBA2FB6878 CRC64;

Query Match 40.3%; Score 111.5; DB 2; Length 695;
Best Local Similarity 34.8%; Pred. No. 3.3e-05;
Matches 16; Conservative 13; Mismatches 16; Indels 1; Gaps 1;

QY 1 HFKECRDKLAYLNDGECFVIEITGSHKH-CRCKEGYQGVRCDO 45
Db 234 HLIKAEKERTFCVNGGECFTVKDLSNPSRYLCKQPGFTGARTCE 279

RESULT 12
NEG4_MOUSE
ID NEG4_MOUSE STANDARD; PRT; 115 AA.
AC Q9WTX4;
DT 16-OCT-2001 (Rel. 40, Created)
DT 16-OCT-2001 (Rel. 40, Last sequence update)
DT 05-JUL-2004 (Rel. 44, Last annotation update)
DE Pro-neuregulin-4, short isoform (Pro-NRG4) [Contains: Neuregulin-4 (NRG-4)].
GN Name=Nrg4;
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=C57BL/6J; TISSUE=Liver;
RX MEDLINE=99276098; PubMed=10348342;
RA Harari D., Tzahar E., Romano J., Shelly M., Pierce J.H., Andrews G.C.,
RA Yarden Y.;
DE "Neuregulin-4: a novel growth factor that acts through the ErbB-4 receptor tyrosine kinase.";
RL Oncogene 18:2681-2689(1999).
CC -!- FUNCTION: Low affinity ligand for the ERBB4 tyrosine kinase receptor. Concomitantly recruits ERBB1 and ERBB2 coreceptors, resulting in ligand-stimulated tyrosine phosphorylation and activation of the ERBB receptors. Does not bind to the ERBB1, ERBB2 and ERBB3 receptors.
CC -!- SUBCELLULAR LOCATION: Exists as an type I membrane protein and as a proteolytically released soluble growth factor form. The membrane-bound form does not seem to be active (By similarity).
CC -!- ALTERNATIVE PRODUCTS:
CC Event=Alternative splicing; Named isoforms=1;
CC Comment=At least 3 isoforms may be produced;
CC Name=1;
CC ISOID=Q9WTX4-1; Sequence=Displayed;
CC -!- TISSUE SPECIFICITY: Highly expressed in pancreas; weakly expressed in muscle.
CC -!- DOMAIN: The cytoplasmic domain may be involved in the regulation of trafficking and proteolytic processing. Regulation of the proteolytic processing involves initial intracellular domain dimerization (By similarity).
CC -!- DOMAIN: ERBB receptor binding is elicited entirely by the EGF-like domain (By similarity).
CC -!- PTM: Proteolytic cleavage close to the plasma membrane on the external face leads to the release of the soluble growth factor form (By similarity).
CC -!- PTM: Extensive glycosylation precedes the proteolytic cleavage (By similarity).
CC -!- SIMILARITY: Belongs to the neuregulin family.
CC -!- SIMILARITY: Contains 1 EGF-like domain.
CC This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/ or send an email to license@isb-sib.ch).
CC EMBL; AF083067; AAD21874.1; -.
CC HSSP; Q12780; 1HRE.
CC MGD; MGI:1933833; Nrg4.

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Tue Nov 2 14:15:38 2004

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DR InterPro; IPR001336; EGF 1.
DR InterPro; IPR000742; EGF 2.
DR InterPro; IPR006209; EGF like.
DR InterPro; IPR006210; IEGF.
DR Pfam; PF00008; EGF; 1.
DR PRINTS; PR00009; EGF_TGF.
DR SMART; SM00181; EGF; 1.
DR PROSITE; PS00022; EGF 1; 1.
DR PROSITE; PS01186; EGF 2; FALSE_NEG.
DR PROSITE; PS50026; EGF 3; 1.
KW Alternative splicing; EGF-like domain; Glycoprotein; Growth factor;
Multigene family; Transmembrane.
FT CHAIN 1 115 Pro-neuregulin-4, membrane-bound form.
FT CHAIN 1 61 Neuregulin-4.
FT DOMAIN 1 62 Extracellular (Potential).
FT TRANSMEM 63 83 Internal signal sequence (Potential).
FT DOMAIN 84 115 Cytoplasmic (Potential).
FT DOMAIN 5 46 EGF-like.
FT DISULFID 9 23 By similarity.
FT DISULFID 17 34 By similarity.
FT DISULFID 36 45 By similarity.
FT CARBOHYD 39 39 N-linked (GlcNAc...) (Potential).
FT CARBOHYD 60 60 N-linked (GlcNAc...) (Potential).
SQ SEQUENCE 115 AA; 12743 MW; 989A1E376F857B49 CRC64;

Query Match 39.7%; Score 110; DB 1; Length 115;
Best Local Similarity 42.2%; Pred. No. 8.1e-06;
Matches 19; Conservative 8; Mismatches 16; Indels 2; Gaps 1;

QY 1 HFKPCRDKLAVCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDDQ 45
DB 5 HSEPCGPRHRSFCLNGICVITPIFS--PFCRCIENYTGARCEE 47

RESULT 13
NRG4_HUMAN
ID NRG4_HUMAN STANDARD; PRT; 115 AA.
AC Q8W6G1;
DT 28-FEB-2003 (Rel. 41, Created)
DT 28-FEB-2003 (Rel. 41, Last sequence update)
DE 05-JUL-2004 (Rel. 44, Last annotation update)
DE Pro-neuregulin-4, short isoform (Pro-NRG4) [Contains: Neuregulin-4
DE (NRG-4)].
GN Name=NRG4;
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Liver;
RX MEDLINE=22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;
RA Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
RA Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
RA Altschul S.E., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
RA Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Haieh F.,
RA Dratchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
RA Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
RA Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Frange C.,
RA Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullany S.J.,
RA Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
RA Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
RA Villalón D.K., Nuzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
RA Fahey J., Helton E., Kettman M., Madan A., Rodrigues S., Sanchez A.,
RA Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
RA Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
RA Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,
RA Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smalls D.E.,
RA Scherch A., Schein J.E., Jones S.J.M., Marra M.A.;
RT "Generation and initial analysis of more than 15,000 full-length human
RT and mouse cDNA sequences."
RL Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
CC -!- FUNCTION: Low affinity ligand for the ERBB4 tyrosine kinase

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receptor. Concomitantly recruits ERBB1 and ERBB2 coreceptors,
resulting in ligand-stimulated tyrosine phosphorylation and
activation of the ERBB receptors. Does not bind to the ERBB1,
ERBB2 and ERBB3 receptors (By similarity).
-!- SUBCELLULAR LOCATION: Exists as a type I membrane protein and as
a proteolytically released soluble growth factor form. The
membrane-bound form does not seem to be involved in the regulation
of trafficking and proteolytic processing. Regulation of the
proteolytic processing involves initial intracellular domain
dimerization (By similarity).
-!- DOMAIN: ERBB receptor binding is elicited entirely by the EGF-like
domain (By similarity).
-!- PTM: Proteolytic cleavage close to the plasma membrane on the
external face leads to the release of the soluble growth factor
form (By similarity).
-!- PTM: Extensive glycosylation precedes the proteolytic cleavage (By
similarity).
-!- SIMILARITY: Belongs to the neuregulin family.
-!- SIMILARITY: Contains 1 EGF-like domain.
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or send an email to license@isb-sib.ch).
EMBL; BC017568; AAH17568.1; -.
DR HSSP; P01132; IGKS.
DR InterPro; IPR001336; EGF 1.
DR InterPro; IPR000742; EGF 2.
DR InterPro; IPR006209; EGF like.
DR Pfam; PF00008; EGF; 1.
DR PRINTS; PR00009; EGF_TGF.
DR PROSITE; PS00022; EGF 1; 1.
DR PROSITE; PS01186; EGF 2; FALSE_NEG.
DR PROSITE; PS50026; EGF 3; 1.
KW EGF-like domain; Glycoprotein; Growth factor; Multigene family;
Transmembrane.
FT CHAIN 1 115 Pro-neuregulin-4, membrane-bound form.
FT CHAIN 1 61 Neuregulin-4.
FT DOMAIN 1 62 Extracellular (Potential).
FT TRANSMEM 63 83 Internal signal sequence (Potential).
FT DOMAIN 84 115 Cytoplasmic (Potential).
FT DOMAIN 5 46 EGF-like.
FT DISULFID 9 23 By similarity.
FT DISULFID 17 34 By similarity.
FT DISULFID 36 45 By similarity.
FT CARBOHYD 39 39 N-linked (GlcNAc...) (Potential).
SQ SEQUENCE 115 AA; 12722 MW; 72F962E2D0F37AC3 CRC64;

Query Match 39.4%; Score 109; DB 1; Length 115;
Best Local Similarity 42.2%; Pred. No. 1.1e-05;
Matches 19; Conservative 7; Mismatches 17; Indels 2; Gaps 1;

QY 1 HFKPCRDKLAVCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDDQ 45
DB 5 HSEPCGPRHRSFCLNGICVITPIFS--PFCRCVENYTGARCEE 47

RESULT 14
Q6PK61
ID Q6PK61 PRELIMINARY; PRT; 241 AA.
AC Q6PK61
DT 05-JUL-2004 (TrEMBLrel. 27, Created)
DT 05-JUL-2004 (TrEMBLrel. 27, Last sequence update)
DT 05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
DE Neuregulin 1, isoform HRG-beta3.
GN Name=NRG1;
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

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OC Mammalia; Eutheria; Primates; Catarrhini; Hominiidae; Homo.
 OX NCBI_TaxID=9606;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE=Ovary;
 RX MEDLINE=22388257; PubMed=12477932;
 RA Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
 RA Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
 RA Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
 RA Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
 RA Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
 RA Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
 RA Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
 RA Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullihy S.J.,
 RA Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
 RA Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
 RA Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
 RA Fahy J., Helton E., Kettner M., Madan A., Rodrigues S., Sanchez A.,
 RA Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
 RA Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
 RA Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S.,
 RA Krzywinski M.I., Skalska U., Smailus D.E., Scherch A., Schein J.E.,
 RA Jones S.J., Marra M.A.;
 RT "Generation and initial analysis of more than 15,000 full-length human
 RT and mouse cDNA sequences.";
 RL Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
 [2]

RP SEQUENCE FROM N.A.
 RC TISSUE=Ovary;
 RA Strausberg R.;
 RL Submitted (APR-2001) to the EMBL/GenBank/DBJ databases.
 CC -!- SIMILARITY: Contains 1 EGF-like domain.
 DR EMBL; BC006492; AAH06492.1; -.
 DR InterPro; IPR000742; EGF_2.
 DR InterPro; IPR006209; EGF_like.
 DR InterPro; IPR006210; IEGF.
 DR InterPro; IPR003599; IG.
 DR InterPro; IPR007110; IG-like.
 DR InterPro; IPR003598; IG_c2.
 DR Pfam; PF00008; EGF; 1.
 DR Pfam; PF00047; IG; 1.
 DR SMART; SM00181; EGF; 1.
 DR SMART; SM00409; IG; 1.
 DR SMART; SM00408; IGE2; 1.
 DR PROSITE; PS00022; EGF_1; UNKNOWN_1.
 DR PROSITE; PS50026; EGF_3; 1.
 DR PROSITE; PS50835; IG_LIKE; 1.
 KW EGF-like domain.
 SQ SEQUENCE 241 AA; 26114 MW; FE8B9FDF71B816B1 CRC64;

Query Match 37.7%; Score 104.5; DB 2; Length 241;
 Best Local Similarity 31.2%; Pred. No. 8.3e-05;
 Matches 15; Conservative 14; Mismatches 18; Indels 1; Gaps 1;

OY 1 HFKECRDKLAYCLNDGECFVIELTGTSHKH-CRCKEGYQGVRCDFL 47
 Db 178 HLVKCAEKETFCVNGGECFVMDLSPNSRYLCKCPNEFTGDRQNYV 225

RESULT 15

Q7RTW0
 ID Q7RTW0 PRELIMINARY; PRT; 241 AA.
 AC Q7RTW0;
 DT 01-MAR-2004 (TrEMBLrel. 26, Created)
 DT 01-MAR-2004 (TrEMBLrel. 26, Last sequence update)
 DT 01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
 DE Neuregulin 1 isoform GGF (Neuregulin 1 isoform hrg-beta3).
 GN Name=NRG1;
 OS Homo sapiens (Human).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Primates; Catarrhini; Hominiidae; Homo.
 OX NCBI_TaxID=9606;
 RN [1]

RP SEQUENCE FROM N.A.
 RX PubMed=12145742;
 RA Stefansson H., Sigurdsson E., Steinthorsdottir V., Bjornsdottir S.,
 RA Sigurdsson T., Ghosh S., Brynjolfsson J., Gunnarsdottir S.,
 RA Ivarsson O., Chou T.T., Hjaltason O., Birgisdottir B., Jonsson H.,
 RA Gudnadottir V.G., Gudmundsdottir E., Bjornsson A., Ingvarsson B.,
 RA Ingason A., Sigfusson S., Hardardottir H., Harvey R.P., Brunner D.,
 RA Mutel V., Gonzalo A., Lemke G., Sainz J., Johannesson G.,
 RA Andreasson T., Gudbjartsson D., Manoleacu A., Frigge M.L., Gurney M.E.,
 RA Kong A., Gulcher J.R., Petursson H., Stefansson K.,
 RT "Neuregulin 1 and Susceptibility to Schizophrenia.";
 RL Am. J. Hum. Genet. 71:0-0(2002).
 CC -!- MISCELLANEOUS: The sequence shown here is derived from an
 CC EMBL/GenBank/DBJ third party annotation (TPA) entry.
 DR EMBL; BK000383; DAA00046.1; -.
 DR InterPro; IPR000742; EGF_2.
 DR InterPro; IPR006209; EGF_like.
 DR InterPro; IPR007110; IG_Like.
 DR Pfam; PF00008; EGF; 1.
 DR Pfam; PF00047; IG; 1.
 DR PROSITE; PS00022; EGF_1; UNKNOWN_1.
 DR PROSITE; PS50026; EGF_3; 1.
 DR PROSITE; PS50835; IG_LIKE; 1.
 SQ SEQUENCE 241 AA; 26142 MW; D2450DB340E6B64D CRC64;

Query Match 37.7%; Score 104.5; DB 2; Length 241;
 Best Local Similarity 31.2%; Pred. No. 8.3e-05;
 Matches 15; Conservative 14; Mismatches 18; Indels 1; Gaps 1;

OY 1 HFKECRDKLAYCLNDGECFVIELTGTSHKH-CRCKEGYQGVRCDFL 47
 Db 178 HLVKCAEKETFCVNGGECFVMDLSPNSRYLCKCPNEFTGDRQNYV 225

Search completed: November 2, 2004, 13:27:39
 Job time : 195 secs

GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: November 2, 2004, 13:19:14 : Search time 38 Seconds
(without alignments)
119.005 Million cell updates/sec

Title: US-09-107-979-4
Perfect score: 277
Sequence: 1 HFPCRDKDLAYCLNDGECF.....SHKCRCKEGYQGVRCDFL 47

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 283416 seqs, 96216763 residues
Total number of hits satisfying chosen parameters: 283416

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : PIR_79:*
1: Pir1.*
2: Pir2.*
3: Pir3.*
4: Pir4.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	277	100.0	713	2 T44447	neuregulin-3 [impo
2	113.5	41.0	125	2 I38405	neu differentiation
3	113.5	41.0	462	2 I38404	neu differentiation
4	113.5	41.0	640	2 A43273	heregulin precursor
5	111.5	40.3	639	2 I61719	neu differentiation
6	105.5	38.1	125	2 S62676	heregulin isoform
7	104.5	37.7	175	2 I38408	neu differentiation
8	104.5	37.7	241	2 D43273	heregulin precursor
9	104.5	37.7	241	2 S32359	glial growth facto
10	104.5	37.7	296	2 A56943	sensory/motor neur
11	104.5	37.7	422	2 S32357	glial growth facto
12	104.5	37.7	637	2 C43273	heregulin precursor
13	104.5	37.7	645	2 B43273	heregulin, splice
14	102.5	37.0	230	2 A56210	neu differentiation
15	102.5	37.0	636	2 I61718	neu differentiation
16	102.5	37.0	662	2 I61722	neu differentiation
17	98.5	35.6	602	2 A45769	acetylcholine rece
18	92.5	33.4	2180	2 T29764	hypothetical prote
19	90	32.5	850	2 JC5700	Erbb kinase activa
20	90	32.5	860	2 JC5702	Erbb kinase activa
21	90	32.5	868	2 JC5701	growth factor - ra
22	85	30.7	80	1 EGVZSF	jagged protein pre
23	84.5	30.5	1220	2 A56136	epiregulin - rat
24	83	30.0	46	2 T0747	epiregulin precurs
25	83	30.0	162	2 S68401	Notch homolog Motc
26	83	30.0	861	2 A48825	notch-1 protein -
27	83	30.0	2531	2 A46019	betacellulin precu
28	82.5	29.8	177	2 A37408	growth factor - my
29	82	29.6	85	1 EGVZM1	

30 82 29.6 230 2 A44074
31 82 29.6 264 2 T22380
32 80.5 29.1 178 2 JC1467
33 80 28.9 907 2 T27317
34 79.5 28.7 140 1 WNVZ9
35 79.5 28.7 140 2 T30766
36 79.5 28.7 142 1 WNVZ3C
37 79.5 28.7 159 1 S27195
38 79.5 28.7 159 1 WFR11
39 79.5 28.7 159 2 I57497
40 79 28.5 2531 2 S18188
41 78 28.2 1207 1 EGHU
42 77.5 28.0 722 2 I48324
43 77.5 28.0 2352 2 T30201
44 76.5 27.6 1372 2 T25933
45 76 27.4 482 2 JC5092

ALIGNMENTS

RESULT 1
T44447
neuregulin-3 [imported] - mouse
C;Species: Mus musculus (house mouse)
C;Date: 21-Jan-2000 #sequence_revision 21-Jan-2000 #text_change 09-Jul-2004
C;Accession: T44447
R;Zhang, D.; Sliwkowski, M.X.; Mark, M.; Frantz, G.; Akita, R.; Sun, Y.; Hillan, K.; Crov
Proc. Natl. Acad. Sci. U.S.A. 94, 9562-9567, 1997
A;Title: Neuregulin-3 (NRG3): A novel neural tissue-enriched protein that binds and activ
A;Reference number: 222773; MUID:97420720; PMID:9275162
A;Accession: T44447
A;Status: preliminary; translated from GB/EMBL/DBJ
A;Molecule type: mRNA
A;Residues: 1-713 <ZHA>
A;Cross-references: UNIPROT:O35181; EMBL:AF010130; NID:g2429163; PIDN:AAB70914.1; PID:g24
C;Genetics:
A;Gene: NRG3
C;Superfamily: mouse neuregulin-3

Query Match 100.0%; Score 277; DB 2; Length 713;
Best Local Similarity 100.0%; Pred. No. 6.9e-24;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDFL 47
|||
Db 288 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDFL 334

RESULT 2
I38405
neu differentiation factor - human (fragment)
C;Species: Homo sapiens (man)
C;Date: 29-May-1998 #sequence_revision 29-May-1998 #text_change 08-Sep-2002
R;Wen, D.; Suggs, S.V.; Karunakaran, D.; Liu, N.; Cupples, R.L.; Luo, Y.; Janssen, A.M.;
Mol. Cell. Biol. 14, 1909-1919, 1994
A;Title: Structural and functional aspects of the multiplicity of Neu differentiation fac
A;Reference number: A56210; MUID:94158863; PMID:7509448
A;Accession: I38405
A;Status: preliminary; translated from GB/EMBL/DBJ
A;Molecule type: mRNA
A;Residues: 1-125 <RES>
A;Cross-references: EMBL:U02327; NID:g408404; PIDN:AAA19952.1; PID:g408405
C;Superfamily: human heregulin; EGF homology; immunoglobulin homology

Query Match 41.0%; Score 113.5; DB 2; Length 125;
Best Local Similarity 34.8%; Pred. No. 5.9e-06;
Matches 16; Conservative 14; Mismatches 15; Indels 1; Gaps 1;

Qy 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDFL 45
|||
Db 56 HLKCAERKTFVNGGECFVMDLSNPSRYLCKQPGFTGARTC 101

RESULT 3
 138404
 new differentiation factor - human
 C:Species: Homo sapiens (man)
 C:Date: 29-May-1998 #sequence_revision 29-May-1998 #text_change 09-Jul-2004
 C:Accession: 138404
 R:Wen, D.; Suggs, S.V.; Karunakaran, D.; Liu, N.; Cupples, R.L.; Luo, Y.; Janssen, A.M.;
 Mol. Cell. Biol. 14, 1909-1919, 1994
 A:Title: Structural and functional aspects of the multiplicity of Neu differentiation fa
 A:Reference number: A56210; MUID:94158863; PMID:7509448
 A:Accession: 138404
 A:Status: preliminary; translated from GB/EMBL/DBJ
 A:Molecule type: mRNA
 A:Residues: 1-462 <RES>
 A:Cross-references: UNIPROT:Q02297; EMBL:U02326; NID:9408402; PIDN:AAA19951.1; PID:G4084
 C:Superfamily: human heregulin; EGF homology; immunoglobulin homology
 Query Match 41.0%; Score 113.5; DB 2; Length 462;
 Best Local Similarity 34.8%; Pred. No. 1.8e-05;
 Matches 16; Conservative 14; Mismatches 15; Indels 1; Gaps 1;
 Qy 1 HFKPCRDKLAYCLNDGECFVIETLTGSHKH-CRCKEGYQGVRCDO 45
 Db 178 HLIVKCAEKETFCVNGEGCFMVRDLNPNRYLCKCPGFTGARCTE 223
 RESULT 4
 A43273
 heregulin precursor, splice form alpha - human
 A:Alternate names: breast cancer cell differentiation factor p45; Neu differentiation fa
 C:Species: Homo sapiens (man)
 C:Date: 31-Dec-1993 #sequence_revision 31-Dec-1993 #text_change 08-Sep-2002
 C:Accession: A43273; A48498; A38155
 R:Holmes, W.E.; Sliwkowski, M.X.; Akita, R.W.; Henzel, W.J.; Lee, J.; Park, J.W.; Yansu
 Science 256, 1205-1210, 1992
 A:Title: Identification of heregulin, a specific activator of p185 (erbB2).
 A:Reference number: A43273; MUID:92271253; PMID:1350381
 A:Accession: A43273
 A:Status: nucleic acid sequence not shown; not compared with conceptual translation
 A:Molecule type: mRNA
 A:Residues: 1-640 <HOL>
 A:Experimental source: breast tumor cell line, MDA-MB-231, ATCC HTB 26
 A:Note: sequence extracted from NCBI backbone (NCBIP:103250)
 R:Culoussou, J.M.; Plowman, G.D.; Carlton, G.W.; Green, J.M.; Shoyab, M.
 J. Biol. Chem. 268, 18407-18410, 1993
 A:Title: Characterization of a breast cancer cell differentiation factor that specifical
 A:Reference number: A48498; MUID:93366731; PMID:7689552
 A:Accession: A48498
 A:Molecule type: protein
 A:Residues: 20-21,'X',23-24,'XX',27-28 <CUL>
 R:Peles, E.; Bacus, S.S.; Koski, R.A.; Lu, H.S.; Wen, D.; Ogden, S.G.; Levy, R.B.; Yarde
 Cell 59, 205-216, 1992
 A:Title: Isolation of the neu/HER-2 stimulatory ligand: a 44 kd glycoprotein that induce
 A:Reference number: A38155; MUID:92208945; PMID:1348215
 A:Accession: A38155
 A:Molecule type: protein
 A:Residues: 'X',15-16,'X',18-20,'RG',23-24,'GP',27,'E',29,'XP',32-36 <PEL>
 A:Note: sequence extracted from NCBI backbone (NCBIP:91347)
 C:Genetics:
 A:Gene: GDB:HGL
 A:Cross-references: GDB:132656; OMIM:142445
 A:Map position: Sp22-8p11
 C:Superfamily: human heregulin; EGF homology; immunoglobulin homology
 C:Keywords: alternative splicing; glycoprotein
 F:182-221/Domain: EGF homology <EGF>
 Query Match 41.0%; Score 113.5; DB 2; Length 640;
 Best Local Similarity 34.8%; Pred. No. 2.4e-05;
 Matches 16; Conservative 14; Mismatches 15; Indels 1; Gaps 1;
 Ov 1 HFKPCRDKLAYCLNDGECFVIETLTGSHKH-CRCKEGYQGVRCDO 45

A;Residues: 1-6;7-16;17-30;31-38;39-58;59-92;93-120;121-125 <HAR>
C;Superfamily: human heregulin; EGF homology; immunoglobulin homology
C;Keywords: proto-oncogene

Query Match 38.1%; Score 105.5; DB 2; Length 125;
Best Local Similarity 32.6%; Pred. No. 4.8e-05;
Matches 15; Conservative 14; Mismatches 16; Indels 1; Gaps 1;

QY 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKH-CRCKEGYQGVRCDO 45
DB 75 HLKCAEKEKTCVNGGECFVWKDLSNPSRYLCKCPQPTGARCTE 120

RESULT 7
138408
neu differentiation factor - human (fragment)
C;Species: Homo sapiens (man)
C;Date: 29-May-1998 #sequence_revision 29-May-1998 #text_change 08-Sep-2002
C;Accession: 138408
R;Wen, D.; Suggs, S.V.; Karunakaran, D.; Liu, N.; Cupples, R.L.; Luo, Y.; Janssen, A.M.;
Mol. Cell. Biol. 14, 1909-1919, 1994
A;Title: Structural and functional aspects of the multiplicity of Neu differentiation fa
A;Reference number: A56210; MUID:94158863; PMID:7509448
A;Accession: 138408
A;Status: preliminary; translated from GB/EMBL/DBDJ
A;Molecule type: mRNA
A;Residues: 1-175 <RES>
A;Cross-references: EMBL:U02330; NID:9408410; PIDN:AAA19955.1; PID:9408411
C;Superfamily: human heregulin; EGF homology; immunoglobulin homology
F;116-155/Domain: EGF homology <EGF>

Query Match 37.7%; Score 104.5; DB 2; Length 175;
Best Local Similarity 31.2%; Pred. No. 8.3e-05;
Matches 15; Conservative 14; Mismatches 18; Indels 1; Gaps 1;

QY 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKH-CRCKEGYQGVRCDOFL 47
DB 112 HLKCAEKEKTCVNGGECFVWKDLSNPSRYLCKCPNEFTGDRCONV 159

RESULT 8
D43273
heregulin precursor, splice form beta-3 - human
N;Alternate names: glial growth factor HRC-beta-3; heregulin
C;Species: Homo sapiens (man)
C;Date: 31-Dec-1993 #sequence_revision 31-Dec-1993 #text_change 09-Jul-2004
C;Accession: D43273; S32358
R;Holmes, W.E.; Sliwkowski, M.X.; Akita, R.W.; Henzel, W.J.; Lee, J.; Park, J.W.; Yansu
Science 256, 1205-1210, 1992
A;Title: Identification of heregulin, a specific activator of p185(erbB2).
A;Reference number: A43273; MUID:92271253; PMID:1350381
A;Accession: D43273
A;Status: preliminary; nucleic acid sequence not shown; not compared with conceptual tra
A;Molecule type: mRNA
A;Residues: 1-241 <HOL>

A;Cross-references: UNIPROT:Q02297
R;Marchionni, M.A.; Goodearl, A.D.J.; Chen, M.S.; Birmingham-McDonogh, O.; Kirk, C.; Hen
les, I.; Davis, J.B.; Hsuan, J.J.; Totty, N.F.; Otsu, M.; McBurney, R.N.; Waterfield, M.
Nature 362, 312-318, 1993
A;Title: Glial growth factors are alternatively spliced erbB2 ligands expressed in the n
A;Reference number: S32358
A;Accession: S32358
A;Molecule type: mRNA
A;Residues: 1-241 <MAR>

A;Cross-references: GB:L12261; NID:G292049; PIDN:AAB59358.1; PID:G292050
C;Genetics:
A;Gene: GDB:HGL; GGF
A;Cross-references: GDB:I32656; OMIM:142445
A;Map position: 8p22-8p11
C;Superfamily: human heregulin; EGF homology; immunoglobulin homology
C;Keywords: alternative splicing
F;162-221/Domain: EGF homology <EGF>

Query Match 37.7%; Score 104.5; DB 2; Length 241;
Best Local Similarity 31.2%; Pred. No. 0.00011;
Matches 15; Conservative 14; Mismatches 18; Indels 1; Gaps 1;

QY 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKH-CRCKEGYQGVRCDOFL 47
DB 178 HLKCAEKEKTCVNGGECFVWKDLSNPSRYLCKCPNEFTGDRCONV 225

RESULT 9
S32359
glial growth factor - bovine
C;Species: Bos primigenius taurus (cattle)
C;Date: 19-Mar-1997 #sequence_revision 01-Aug-1997 #text_change 09-Jul-2004
C;Accession: S32359
R;Marchionni, M.A.; Goodearl, A.D.J.; Chen, M.S.; Birmingham-McDonogh, O.; Kirk, C.; Hen
les, I.; Davis, J.B.; Hsuan, J.J.; Totty, N.F.; Otsu, M.; McBurney, R.N.; Waterfield, M.
Nature 362, 312-318, 1993
A;Title: Glial growth factors are alternatively spliced erbB2 ligands expressed in the n
A;Reference number: S32357; MUID:93205115; PMID:8096067
A;Accession: S32359
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-241 <MAR>
A;Cross-references: UNIPROT:Q07112; GB:L12259; NID:G289413; PIDN:AAA30540.1; PID:G289414
C;Superfamily: human heregulin; EGF homology; immunoglobulin homology
F;182-221/Domain: EGF homology <EGF>

Query Match 37.7%; Score 104.5; DB 2; Length 241;
Best Local Similarity 31.2%; Pred. No. 0.00011;
Matches 15; Conservative 14; Mismatches 18; Indels 1; Gaps 1;

QY 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKH-CRCKEGYQGVRCDOFL 47
DB 178 HLKCAEKEKTCVNGGECFVWKDLSNPSRYLCKCPNEFTGDRCONV 225

RESULT 10
A56943
sensory/motor neuron-derived factor - human
C;Species: Homo sapiens (man)
C;Date: 18-Aug-1995 #sequence_revision 18-Aug-1995 #text_change 09-Jul-2004
C;Accession: A56943
R;Ho, W.H.; Armanini, M.P.; Nuijens, A.; Phillips, H.S.; Osherooff, P.L.
J. Biol. Chem. 270, 14523-14532, 1995
A;Title: Sensory and motor neuron-derived factor. A novel heregulin variant highly expre
A;Reference number: A56943; MUID:95301541; PMID:7782315
A;Accession: A56943
A;Status: preliminary; not compared with conceptual translation
A;Molecule type: mRNA
A;Residues: 1-296 <HOA>
A;Cross-references: UNIPROT:Q15491; GB:L41827; NID:G862422; PIDN:AAC41764.1; PID:G862423
C;Superfamily: human heregulin; EGF homology; immunoglobulin homology
F;237-276/Domain: EGF homology <EGF>

Query Match 37.7%; Score 104.5; DB 2; Length 296;
Best Local Similarity 31.2%; Pred. No. 0.00013;
Matches 15; Conservative 14; Mismatches 18; Indels 1; Gaps 1;

QY 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKH-CRCKEGYQGVRCDOFL 47
DB 233 HLKCAEKEKTCVNGGECFVWKDLSNPSRYLCKCPNEFTGDRCONV 280

RESULT 11
S32357
glial growth factor - human
C;Species: Homo sapiens (man)
C;Date: 02-Dec-1993 #sequence_revision 10-Nov-1995 #text_change 08-Sep-2002
C;Accession: S32357
R;Marchionni, M.A.; Goodearl, A.D.J.; Chen, M.S.; Birmingham-McDonogh, O.; Kirk, C.; Hen
les, I.; Davis, J.B.; Hsuan, J.J.; Totty, N.F.; Otsu, M.; McBurney, R.N.; Waterfield, M.
Nature 362, 312-318, 1993

A;Cross-references: UNIPROT:Q02297
R;Wen, D.; Suggs, S.V.; Karunakaran, D.; Liu, N.; Cupples, R.L.; Luo, Y.; Janssen, A.M.
Mol. Cell. Biol. 14, 1909-1919, 1994

A;Title: Structural and functional aspects of the multiplicity of Neu differentiation fa
A;Reference number: A56210; MUID:94158863; PMID:7509448

A;Accession: I38406

A;Status: preliminary; translated from GB/EMBL/DDBJ

A;Molecule type: mRNA

A;Residues: 'A'.95-418, 'F'.420-645 <RES>

A;Cross-references: EMBL:U02328; NID:g408406; PIDN:AAA19953.1; PID:g408407

C;Genetics:

A;Gene: GDB:HGL

A;Cross-references: GDB:I32656; OMIM:142445

A;Map position: 8p22-8p11

C;Superfamily: human heregulin; EGF homology; immunoglobulin homology

C;Keywords: alternative splicing

F;182-221/Domain: EGF homology <EGF>

Query Match 37.7%; Score 104.5; DB 2; Length 645;
Best Local Similarity 31.2%; Pred.No. 0.00025;
Matches 15; Conservative 14; Mismatches 18; Indels 1; Gaps 1;

Dd 178 HLVKCAEKETFCVNGGECFMVKDLSNPRLCKPNEFTGDRCONVV 225
| :
QY 1 HFKPCDKLAYCLNDGECFVIETLTGSHKH-CRCKEGYGVRCDOFL 47
| :

RESULT 14

A56210
neu differentiation factor - rat (fragment)
C;Species: Rattus norvegicus (Norway rat)
C;Date: 02-Jul-1996 #sequence_revision 02-Jul-1996 #text_change 08-Sep-2002
C;Accession: A56210

R;Wen, D.; Suggs, S.V.; Karunakaran, D.; Liu, N.; Cupples, R.L.; Luo, Y.; Janssen, A.M.
Mol. Cell. Biol. 14, 1909-1919, 1994

A;Title: Structural and functional aspects of the multiplicity of Neu differentiation fa
A;Reference number: A56210; MUID:94158863; PMID:7509448

A;Accession: A56210

A;Status: preliminary; translated from GB/EMBL/DDBJ

A;Molecule type: mRNA

A;Residues: 1-230 <RES>

A;Cross-references: EMBL:U02315; NID:g408380; PIDN:AAA19940.1; PID:g408381

C;Superfamily: human heregulin; EGF homology; immunoglobulin homology

Query Match 37.0%; Score 102.5; DB 2; Length 230;
Best Local Similarity 31.2%; Pred.No. 0.00018;
Matches 15; Conservative 13; Mismatches 19; Indels 1; Gaps 1;

Dd 167 HLVKCAEKETFCVNGGECFMVKDLSNPRLCKPNEFTGDRCONVV 214
| :

RESULT 15

I61718
neu differentiation factor - rat
C;Species: Rattus norvegicus (Norway rat)
C;Date: 29-May-1998 #sequence_revision 29-May-1998 #text_change 09-Jul-2004
C;Accession: I61718; I61721; I61720

R;Wen, D.; Suggs, S.V.; Karunakaran, D.; Liu, N.; Cupples, R.L.; Luo, Y.; Janssen, A.M.
Mol. Cell. Biol. 14, 1909-1919, 1994

A;Title: Structural and functional aspects of the multiplicity of Neu differentiation fa
A;Reference number: A56210; MUID:94158863; PMID:7509448

A;Accession: I61718

A;Status: preliminary; translated from GB/EMBL/DDBJ

A;Molecule type: mRNA

A;Residues: 1-636 <RES>

A;Cross-references: UNIPROT:P43322; EMBL:U02318; NID:g408386; PIDN:AAA19943.1; PID:g408387

A;Accession: I61721

A;Status: preliminary; translated from GB/EMBL/DDBJ

A;Molecule type: mRNA

A;Residues: 1-444, 'A'.446-636 <RES>

A;Cross-references: EMBL:U02321; NID:g408392; PIDN:AAA19946.1; PID:g408393

A:Accession: I61720
 A:Status: preliminary; translated from GB/EMBL/DBJ
 A:Molecule type: mRNA
 A:Residues: 1-298,386,'V',388,'TR',391 <RE3>
 A:Cross-references: EMBL:U02320; NID:G408390; PIDN:AAAI9945.1; PID:G408391
 C:Superfamily: human heregulin; EGF homology; immunoglobulin homology
 F;182-221/Domain: EGF homology <EGF>

Query Match 37.0%; Score 102.5; DB 2; Length 636;
 Best Local Similarity 31.2%; Pred. No. 0.00042;
 Matches 15; Conservative 13; Mismatches 19; Indels 1; Gaps 1;

Qy 1 HFKPCRDKLAYCLNDGECFVETLTGSHKH-CRCCKGYQGVRCQDEL 47
 Db 178 HLIKCAEKETFCVNGGECFTVKLSNPSRYLCKPCNFTGDRCONV 225

Search completed: November 2, 2004, 13:28:22
 Job time : 39 secs

QY 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 47
Db 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 47

RESULT 3
US-09-877-665-4
; Sequence 4, Application US/09877665
; Patent No. US20020164680A1
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
; ; Ligands and Uses Therefor
; ;
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: WinPatin (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/877,665
; FILING DATE: 08-Jun-2001
; CLASSIFICATION: <Unknown>
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US/09/109,206
; FILING DATE: 30-Jun-1998
; ATTORNEY/AGENT INFORMATION:
; NAME: Conley, Deirdre L.
; REGISTRATION NUMBER: 36,487
; REFERENCE/DOCKET NUMBER: P1084R1-1
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650/225-2066
; TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 4:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 47 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
; FEATURE:
; NAME/KEY: NRG3 EGF-like domain/amino acid seq.
; LOCATION: 1-47
; IDENTIFICATION METHOD:
; OTHER INFORMATION:
; SEQUENCE DESCRIPTION: SEQ ID NO: 4:
; ;
; US-09-877-665-4
; Query Match 100.0%; Score 277; DB 9; Length 47;
; Best Local Similarity 100.0%; Pred. No. 4.3e-26;
; Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 47
Db 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 47

RESULT 4
US-09-877-665-8
; Sequence 8, Application US/09877665
; Patent No. US20020164680A1
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
; ; Ligands and Uses Therefor
; ;
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: WinPatin (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/817,647
; FILING DATE: 26-Mar-2001
; CLASSIFICATION: <Unknown>
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 09/107,979
; FILING DATE: <Unknown>
; ATTORNEY/AGENT INFORMATION:
; NAME: Conley, Deirdre L.
; REGISTRATION NUMBER: 36,487
; REFERENCE/DOCKET NUMBER: P1084R1-2
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650/225-2066
; TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 8:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 47 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
; FEATURE:
; NAME/KEY: NRG3 EGF-like domain/amino acid seq.
; LOCATION: 1-47
; IDENTIFICATION METHOD:
; OTHER INFORMATION:
; SEQUENCE DESCRIPTION: SEQ ID NO: 8:
; ;
; US-09-817-647-8
; Query Match 100.0%; Score 277; DB 9; Length 47;
; Best Local Similarity 100.0%; Pred. No. 4.3e-26;
; Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

; SEQUENCE CHARACTERISTICS:
; LENGTH: 47 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
; FEATURE:
; NAME/KEY: NRG3 EGF-like domain/amino acid seq.
; LOCATION: 1-47
; IDENTIFICATION METHOD:
; OTHER INFORMATION:
; SEQUENCE DESCRIPTION: SEQ ID NO: 4:
; ;
; US-09-817-647-4
; Query Match 100.0%; Score 277; DB 9; Length 47;
; Best Local Similarity 100.0%; Pred. No. 4.3e-26;
; Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 47
Db 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 47

RESULT 2
US-09-817-647-8
; Sequence 8, Application US/09817647
; Patent No. US20020082229A1
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
; ; Ligands and Uses Therefor
; ;
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: WinPatin (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/817,647
; FILING DATE: 26-Mar-2001
; CLASSIFICATION: <Unknown>
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 09/107,979
; FILING DATE: <Unknown>
; ATTORNEY/AGENT INFORMATION:
; NAME: Conley, Deirdre L.
; REGISTRATION NUMBER: 36,487
; REFERENCE/DOCKET NUMBER: P1084R1-2
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650/225-2066
; TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 8:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 47 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
; FEATURE:
; NAME/KEY: NRG3 EGF-like domain/amino acid seq.
; LOCATION: 1-47
; IDENTIFICATION METHOD:
; OTHER INFORMATION:
; SEQUENCE DESCRIPTION: SEQ ID NO: 8:
; ;
; US-09-817-647-8
; Query Match 100.0%; Score 277; DB 9; Length 47;
; Best Local Similarity 100.0%; Pred. No. 4.3e-26;
; Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

STREET: 1 DNA Way
CITY: South San Francisco
STATE: California
COUNTRY: USA
ZIP: 94080
COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WinPatIn (Genentech)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/877,665
FILING DATE: 08-Jun-2001
CLASSIFICATION: <Unknown>
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/09/109,206
FILING DATE: 30-Jun-1998
ATTORNEY/AGENT INFORMATION:
NAME: Conley, Deirdre L.
REGISTRATION NUMBER: 36,487
REFERENCE/DOCKET NUMBER: P1084R1-1
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650/225-2066
TELEFAX: 650/952-9881
INFORMATION FOR SEQ ID NO: 8:
SEQUENCE CHARACTERISTICS:
LENGTH: 47 amino acids
TYPE: Amino Acid
TOPOLOGY: Linear
FEATURE:
NAME/KEY: NRG3 EGF-like domain/amino acid seq.
LOCATION: 1-47
IDENTIFICATION METHOD:
OTHER INFORMATION:
SEQUENCE DESCRIPTION: SEQ ID NO: 8:

US-09-877-665-8

Query Match 100.0%; Score 277; DB 9; Length 47;
Best Local Similarity 100.0%; Pred. No. 4.3e-26;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKCRCKEGYQGVRCDOFL 47
DB 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKCRCKEGYQGVRCDOFL 47

RESULT 5
US-10-136-573A-4
Sequence 4, Application US/10136573A
Publication No. US20020161200A1
GENERAL INFORMATION:
APPLICANT: Godowski, Paul J.
APPLICANT: Mark, Melanie Rose
APPLICANT: Zhang, Dong Xiao
TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related Ligands and
FILE REFERENCE: P1084R1C2
CURRENT APPLICATION NUMBER: US/10/136,573A
CURRENT FILING DATE: 2002-04-29
PRIOR APPLICATION NUMBER: US 09/480,977
PRIOR FILING DATE: 2000-01-11
PRIOR APPLICATION NUMBER: US 08/899,437
PRIOR FILING DATE: 1997-07-24
PRIOR APPLICATION NUMBER: US 60/052,019
PRIOR FILING DATE: 1997-07-09
NUMBER OF SEQ ID NOS: 23
SEQ ID NO 4
LENGTH: 47
TYPE: PRT
ORGANISM: Homo sapiens
US-10-136-573A-4

Query Match 100.0%; Score 277; DB 13; Length 47;

Best Local Similarity 100.0%; Pred. No. 4.3e-26;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKCRCKEGYQGVRCDOFL 47
DB 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKCRCKEGYQGVRCDOFL 47

RESULT 6

US-10-136-573A-8
Sequence 8, Application US/10136573A
Publication No. US20020161200A1
GENERAL INFORMATION:
APPLICANT: Godowski, Paul J.
APPLICANT: Mark, Melanie Rose
APPLICANT: Zhang, Dong Xiao
TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related Ligands and
FILE REFERENCE: P1084R1C2
CURRENT APPLICATION NUMBER: US/10/136,573A
CURRENT FILING DATE: 2002-04-29
PRIOR APPLICATION NUMBER: US 09/480,977
PRIOR FILING DATE: 2000-01-11
PRIOR APPLICATION NUMBER: US 08/899,437
PRIOR FILING DATE: 1997-07-24
PRIOR APPLICATION NUMBER: US 60/052,019
PRIOR FILING DATE: 1997-07-09
NUMBER OF SEQ ID NOS: 23
SEQ ID NO 8
LENGTH: 47
TYPE: PRT
ORGANISM: Homo sapiens
US-10-136-573A-8

Query Match 100.0%; Score 277; DB 13; Length 47;
Best Local Similarity 100.0%; Pred. No. 4.3e-26;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKCRCKEGYQGVRCDOFL 47
DB 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKCRCKEGYQGVRCDOFL 47

RESULT 7
US-10-215-862-4
Sequence 4, Application US/10215862
Publication No. US20030036166A1
GENERAL INFORMATION:
APPLICANT: Godowski, Paul J.
APPLICANT: Mark, Melanie Rose
APPLICANT: Zhang, Dong Xiao
TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related Ligands and
FILE REFERENCE: P1084R1D2C1
CURRENT APPLICATION NUMBER: US/10/215,862
CURRENT FILING DATE: 2002-09-24
PRIOR APPLICATION NUMBER: US 09/126,663
PRIOR FILING DATE: 1998-07-30
PRIOR APPLICATION NUMBER: US 08/899,437
PRIOR FILING DATE: 1997-07-24
PRIOR APPLICATION NUMBER: US 60/052,019
PRIOR FILING DATE: 1997-07-09
NUMBER OF SEQ ID NOS: 23
SEQ ID NO 4
LENGTH: 47
TYPE: PRT
ORGANISM: Homo sapiens
US-10-215-862-4

Query Match 100.0%; Score 277; DB 14; Length 47;
Best Local Similarity 100.0%; Pred. No. 4.3e-26;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 47
DB 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 47

RESULT 8
US-10-215-862-8
Sequence 8, Application US/10215862
Publication No. US20030036166A1
GENERAL INFORMATION:
APPLICANT: Young et al.
TITLE OF INVENTION: Heregulin-Like Factor
FILE REFERENCE: PF383D1
CURRENT APPLICATION NUMBER: US/10/609,370
CURRENT FILING DATE: 2003-07-01
PRIOR APPLICATION NUMBER: 09/097,681
PRIOR FILING DATE: 1998-06-16
PRIOR APPLICATION NUMBER: 60/049,942
PRIOR FILING DATE: 1997-06-17
NUMBER OF SEQ ID NOS: 22
SOFTWARE: PatentIn version 3.2
SEQ ID NO 2
LENGTH: 157
TYPE: PRT
ORGANISM: Homo sapiens
US-10-609-370-2

Query Match 100.0%; Score 277; DB 15; Length 157;
Best Local Similarity 100.0%; Pred. No. 1.4e-25;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 47
DB 31 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 77

RESULT 11
US-09-817-647-7
Sequence 7, Application US/09817647
Patent No. US20020082229A1
GENERAL INFORMATION:
APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
Ligands and Uses Therefor
NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESS:
ADDRESSEE: Genentech, Inc.
STREET: 1 DNA Way
CITY: South San Francisco
STATE: California
COUNTRY: USA
ZIP: 94080
COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WinPatIn (Genentech)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/817,647
FILING DATE: 26-Mar-2001
CLASSIFICATION: <Unknown>
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 09/107,979
FILING DATE: <Unknown>
ATTORNEY/AGENT INFORMATION:
NAME: Conley, Deirdre L.
REGISTRATION NUMBER: 36,487
REFERENCE/DOCKET NUMBER: P1084R1-2
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650/225-2066
TELEFAX: 650/952-9881
INFORMATION FOR SEQ ID NO: 7:
SEQUENCE CHARACTERISTICS:
LENGTH: 360 amino acids
TYPE: Amino Acid
TOPOLOGY: Linear
FEATURE:
NAME/KEY: hNRG3 extracellular domain/Amino AcidSeq
LOCATION: 1-360
IDENTIFICATION METHOD:

QY 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 47
DB 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 47

RESULT 8
US-10-215-862-8
Sequence 8, Application US/10215862
Publication No. US20030036166A1
GENERAL INFORMATION:
APPLICANT: Godowski, Paul J.
APPLICANT: Mark, Melanie Rose
APPLICANT: Zhang, Dong Xiao
TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related Ligands and
TITLE OF INVENTION: Uses Therefor
FILE REFERENCE: P1084R1D2C1
CURRENT APPLICATION NUMBER: US/10/215,862
CURRENT FILING DATE: 2002-09-24
PRIOR APPLICATION NUMBER: US 09/126,663
PRIOR FILING DATE: 1998-07-30
PRIOR APPLICATION NUMBER: US 08/899,437
PRIOR FILING DATE: 1997-07-24
PRIOR APPLICATION NUMBER: US 60/052,019
PRIOR FILING DATE: 1997-07-09
NUMBER OF SEQ ID NOS: 23
SEQ ID NO 8
LENGTH: 47
TYPE: PRT
ORGANISM: Homo sapiens
US-10-215-862-8

Query Match 100.0%; Score 277; DB 14; Length 47;
Best Local Similarity 100.0%; Pred. No. 4.3e-26;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 47
DB 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 47

RESULT 9
US-10-240-411-6
Sequence 6, Application US/10240411
Publication No. US20040121326A1
GENERAL INFORMATION:
APPLICANT: Harari, Daniel
APPLICANT: Yarden, Yoel
TITLE OF INVENTION: NOVEL GROWTH FACTOR WHICH ACTS THROUGH ERB B-4 RECEPTOR TYROSINE
KINASE
TITLE OF INVENTION: SEQUENCES ENCODING SAME AND USES THEREOF
FILE REFERENCE: 01/21918
CURRENT APPLICATION NUMBER: US/10/240,411
CURRENT FILING DATE: 2003-05-16
PRIOR APPLICATION NUMBER: US 09/553,769
PRIOR FILING DATE: 2000-04-21
NUMBER OF SEQ ID NOS: 20
SOFTWARE: PatentIn version 3.0
SEQ ID NO 6
LENGTH: 48
TYPE: PRT
ORGANISM: Mus musculus
US-10-240-411-6

Query Match 100.0%; Score 277; DB 16; Length 48;
Best Local Similarity 100.0%; Pred. No. 4.4e-26;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 47
DB 2 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 48

RESULT 10
US-10-609-370-2

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/
/ OTHER INFORMATION:
/ SEQUENCE DESCRIPTION: SEQ ID NO: 7:
US-09-817-647-7

Query Match      100.0%; Score 277; DB 9; Length 360;
Best Local Similarity 100.0%; Pred. No. 3.3e-25;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 47
Db 286 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 332

RESULT 12
US-09-877-665-7
/ Sequence 7, Application US/09877665
/ Patent No. US20020164680A1
/ GENERAL INFORMATION:
/ APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
/ TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
/ Ligands and Uses Therefor
/ NUMBER OF SEQUENCES: 23
/ CORRESPONDENCE ADDRESS:
/ ADDRESSER: Genentech, Inc.
/ STREET: 1 DNA Way
/ CITY: South San Francisco
/ STATE: California
/ COUNTRY: USA
/ ZIP: 94080
/ COMPUTER READABLE FORM:
/ MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
/ COMPUTER: IBM PC compatible
/ OPERATING SYSTEM: PC-DOS/MS-DOS
/ SOFTWARE: WinPatIn (Genentech)
/ CURRENT APPLICATION DATA:
/ APPLICATION NUMBER: US/09/877,665
/ FILING DATE: 08-Jun-2001
/ CLASSIFICATION: <Unknown>
/ PRIOR APPLICATION DATA:
/ APPLICATION NUMBER: US/09/109,206
/ FILING DATE: 30-Jun-1998
/ ATTORNEY/AGENT INFORMATION:
/ NAME: Conley, Deirdre L.
/ REGISTRATION NUMBER: 36,487
/ REFERENCE/DOCKET NUMBER: P1084R1-1
/ TELECOMMUNICATION INFORMATION:
/ TELEPHONE: 650/225-2066
/ TELEFAX: 650/952-9881
/ INFORMATION FOR SEQ ID NO: 7:
/ SEQUENCE CHARACTERISTICS:
/ LENGTH: 360 amino acids
/ TYPE: Amino Acid
/ TOPOLOGY: Linear
/ FEATURE:
/ NAME/KEY: hNRG3 extracellular domain/Amino Acidseq
/ LOCATION: 1-360
/ IDENTIFICATION METHOD:
/ OTHER INFORMATION:
/ SEQUENCE DESCRIPTION: SEQ ID NO: 7:
US-09-877-665-7

Query Match      100.0%; Score 277; DB 9; Length 360;
Best Local Similarity 100.0%; Pred. No. 3.3e-25;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 47
Db 286 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 332

RESULT 13
US-10-136-573A-7
/ Sequence 7, Application US/10136573A
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/
/ Publication No. US20020161200A1
/ GENERAL INFORMATION:
/ APPLICANT: Godowski, Paul J.
/ APPLICANT: Mark, Melanie Rose
/ APPLICANT: Zhang, Dong Xiao
/ TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related Ligands and
/ Uses Therefor
/ FILE REFERENCE: P1084R1C2
/ CURRENT APPLICATION NUMBER: US/10/136,573A
/ CURRENT FILING DATE: 2002-04-29
/ PRIOR APPLICATION NUMBER: US 09/480,977
/ PRIOR FILING DATE: 2000-01-11
/ PRIOR APPLICATION NUMBER: US 08/899,437
/ PRIOR FILING DATE: 1997-07-24
/ PRIOR APPLICATION NUMBER: US 60/052,019
/ PRIOR FILING DATE: 1997-07-09
/ NUMBER OF SEQ ID NOS: 23
/ SEQ ID NO 7
/ LENGTH: 360
/ TYPE: PRT
/ ORGANISM: Homo sapiens
/ US-10-136-573A-7

Query Match      100.0%; Score 277; DB 13; Length 360;
Best Local Similarity 100.0%; Pred. No. 3.3e-25;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 47
Db 286 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 332

RESULT 14
US-10-215-862-7
/ Sequence 7, Application US/10215862
/ Publication No. US20030036166A1
/ GENERAL INFORMATION:
/ APPLICANT: Godowski, Paul J.
/ APPLICANT: Mark, Melanie Rose
/ APPLICANT: Zhang, Dong Xiao
/ TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related Ligands and
/ Uses Therefor
/ FILE REFERENCE: P1084R1D2C1
/ CURRENT APPLICATION NUMBER: US/10/215,862
/ CURRENT FILING DATE: 2002-09-24
/ PRIOR APPLICATION NUMBER: US 09/126,663
/ PRIOR FILING DATE: 1998-07-30
/ PRIOR APPLICATION NUMBER: US 08/899,437
/ PRIOR FILING DATE: 1997-07-24
/ PRIOR APPLICATION NUMBER: US 60/052,019
/ PRIOR FILING DATE: 1997-07-09
/ NUMBER OF SEQ ID NOS: 23
/ SEQ ID NO 7
/ LENGTH: 360
/ TYPE: PRT
/ ORGANISM: Homo sapiens
/ US-10-215-862-7

Query Match      100.0%; Score 277; DB 14; Length 360;
Best Local Similarity 100.0%; Pred. No. 3.3e-25;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 47
Db 286 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 332

RESULT 15
US-09-817-647-3
/ Sequence 3, Application US/09817647
/ Patent No. US20020082229A1
/ GENERAL INFORMATION:
/ APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
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Tue Nov 2 14:15:37 2004

TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
Ligands and Uses Therefor

NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESS:

ADDRESSEE: Genentech, Inc.
STREET: 1 DNA Way
CITY: South San Francisco
STATE: California
COUNTRY: USA
ZIP: 94080

COMPUTER READABLE FORM:

MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WinPatIn (Genentech)

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/09/817,647

FILING DATE: 26-Mar-2001

CLASSIFICATION: <Unknown>

PRIOR APPLICATION DATA:

APPLICATION NUMBER: 09/107,979

FILING DATE: <Unknown>

ATTORNEY/AGENT INFORMATION:

NAME: Conley, Deirdre L.

REGISTRATION NUMBER: 36,487

REFERENCE/DOCKET NUMBER: P1084R1-2

TELECOMMUNICATION INFORMATION:

TELEPHONE: 650/225-2066

TELEFAX: 650/952-9881

INFORMATION FOR SEQ ID NO: 3:

SEQUENCE CHARACTERISTICS:

LENGTH: 362 amino acids

TYPE: Amino Acid

TOPOLOGY: Linear

FEATURE:

NAME/KEY: MNRG3 extracellular domainAmino acid seq

LOCATION: 1-362

IDENTIFICATION METHOD:

OTHER INFORMATION:

SEQUENCE DESCRIPTION: SEQ ID NO: 3:

US-09-817-647-3

Query Match 100.0%; Score 277; DB 9; Length 362;

Best Local Similarity 100.0%; Pred. No. 3.3e-25;

Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFKECRDKLAYCLNDGECFVIELTGTSHKHCRCCKEGYQGVRCDOFL 47

DB 288 HFKECRDKLAYCLNDGECFVIELTGTSHKHCRCCKEGYQGVRCDOFL 334

Search completed: November 2, 2004, 13:39:26

Job time : 129 secs

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OM protein - protein search, using sw model

Run on: November 2, 2004, 13:45:37 ; Search time 127 Seconds

(without alignments)
119.985 Million cell updates/sec

Title: US-09-107-979-4

Perfect score: 47

Sequence: 1 HFKEPCDKLAYCLNDGECE.....SHKHCRCCKGYGVRCDOFL 47

Scoring table: OLIGO

Gapop 60.0 , Gapext 60.0

Searched: 1370721 seqs, 324215800 residues

Word size : 0

Total number of hits satisfying chosen parameters: 1370721

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Listing first 45 summaries

Database : Published Applications AA:
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2: /cgn2_6/ptodata/1/pubpaa/PCT_NEW_PUB.pep.*
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14: /cgn2_6/ptodata/1/pubpaa/US10B_PUBCOMB.pep.*
15: /cgn2_6/ptodata/1/pubpaa/US10C_PUBCOMB.pep.*
16: /cgn2_6/ptodata/1/pubpaa/US10D_PUBCOMB.pep.*
17: /cgn2_6/ptodata/1/pubpaa/US10_NEW_PUB.pep.*
18: /cgn2_6/ptodata/1/pubpaa/US11_NEW_PUB.pep.*
19: /cgn2_6/ptodata/1/pubpaa/US60_NEW_PUB.pep.*
20: /cgn2_6/ptodata/1/pubpaa/US60_PUBCOMB.pep.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Match	Query Length	ID	Description
1	47	100.0	47	9	US-09-817-647-4
2	47	100.0	47	9	US-09-817-647-8
3	47	100.0	47	9	US-09-817-647-3
4	47	100.0	47	9	US-09-817-647-4
5	47	100.0	47	13	US-10-136-573A-4
6	47	100.0	47	13	US-10-136-573A-8
7	47	100.0	47	14	US-10-215-862-4
8	47	100.0	47	14	US-10-215-862-8
9	47	100.0	48	16	US-10-240-411-6
10	47	100.0	157	15	US-10-609-370-2
11	47	100.0	360	9	US-09-817-647-7
12	47	100.0	360	9	US-09-817-647-7
13	47	100.0	360	13	US-10-136-573A-7

14 47 100.0 360 14 US-10-215-862-7
15 47 100.0 362 9 US-09-817-647-3
16 47 100.0 362 9 US-09-817-647-3
17 47 100.0 362 13 US-10-136-573A-3
18 47 100.0 362 14 US-10-215-862-3
19 47 100.0 696 9 US-09-817-647-23
20 47 100.0 696 9 US-09-817-647-23
21 47 100.0 696 13 US-10-136-573A-23
22 47 100.0 696 14 US-10-215-862-23
23 47 100.0 713 9 US-09-817-647-2
24 47 100.0 713 9 US-09-817-647-2
25 47 100.0 713 13 US-10-136-573A-2
26 47 100.0 713 14 US-10-215-862-2
27 47 100.0 720 9 US-09-817-647-6
28 47 100.0 720 9 US-09-817-647-6
29 47 100.0 720 13 US-10-136-573A-6
30 47 100.0 720 14 US-10-215-862-6
31 47 100.0 720 15 US-10-609-370-22
32 8 17.0 8 9 US-09-817-647-19
33 8 17.0 8 9 US-09-817-647-19
34 8 17.0 8 13 US-10-136-573A-19
35 8 17.0 8 14 US-10-215-862-19
36 7 14.9 318 15 US-10-424-599-210620
37 7 14.9 358 16 US-10-437-963-131439
38 7 14.9 401 14 US-10-180-158-70
39 7 14.9 407 14 US-10-180-158-68
40 7 14.9 407 15 US-10-424-599-211304
41 7 14.9 407 15 US-10-424-599-211305
42 7 14.9 407 16 US-10-767-701-44139
43 7 14.9 421 15 US-10-425-114-62587
44 7 14.9 423 15 US-10-425-114-47208
45 7 14.9 450 15 US-10-236-392-106

ALIGNMENTS

RESULT 1

US-09-817-647-4
; Sequence 4, Application US/09817647
; Patent No. US20020082229A1

GENERAL INFORMATION:
APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao

TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
Ligands and Uses Therefor

NUMBER OF SEQUENCES: 23

CORRESPONDENCE ADDRESS:

ADDRESSEE: Genentech, Inc.
STREET: 1 DNA Way

CITY: South San Francisco

STATE: California

COUNTRY: USA

ZIP: 94080

COMPUTER READABLE FORM:

MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: Winpatin (Genentech)

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/09/817,647

FILING DATE: 26-Mar-2001

CLASSIFICATION: <Unknown>

PRIOR APPLICATION DATA:

APPLICATION NUMBER: 09/107,979

FILING DATE: <Unknown>

ATTORNEY/AGENT INFORMATION:

NAME: Conley, Deirdre L.

REGISTRATION NUMBER: 36,487

REFERENCE/DOCKET NUMBER: P1084R1-2

TELECOMMUNICATION INFORMATION:

TELEPHONE: 650/225-2066

TELEFAX: 650/952-9881

INFORMATION FOR SEQ ID NO: 4:

1 HFKPCRDKLAYCLNDGECFVIETLTGSHKHCKCKEGYQGVRCDOFL 47
1 HFKPCRDKLAYCLNDGECFVIETLTGSHKHCKCKEGYQGVRCDOFL 47

RESULT 3
US-09-877-665-4
; Sequence 4, Application US/09877665
; Patent No. US2002016480A1
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
; Ligands and Uses Therefor
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: WinPatIn (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/877,665
; FILING DATE: 08-Jun-2001
; CLASSIFICATION: <Unknown>
; PRIOR APPLICATION NUMBER: US/09/109,206
; FILING DATE: 30-Jun-1998
; ATTORNEY/AGENT INFORMATION:
; NAME: Conley, Deirdre L.
; REGISTRATION NUMBER: 36,487
; REFERENCE/DOCKET NUMBER: P1084R1-1
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650/225-2066
; TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 4:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 47 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
; FEATURE:
; NAME/KEY: NRG3 EGF-like domain/amino acid seq.
; LOCATION: 1-47
; IDENTIFICATION METHOD:
; OTHER INFORMATION:
; SEQUENCE DESCRIPTION: SEQ ID NO: 4:
US-09-877-665-4
Query Match 100.0%; Score 47; DB 9; Length 47;
Best Local Similarity 100.0%; Pred. No. 1.5e-43;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HFKPCRDKLAYCLNDGECFVIETLTGSHKHCKCKEGYQGVRCDOFL 47
Db 1 HFKPCRDKLAYCLNDGECFVIETLTGSHKHCKCKEGYQGVRCDOFL 47

RESULT 4
US-09-877-665-8
; Sequence 8, Application US/09877665
; Patent No. US2002016480A1
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
; Ligands and Uses Therefor
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.

1 HFKPCRDKLAYCLNDGECFVIETLTGSHKHCKCKEGYQGVRCDOFL 47
1 HFKPCRDKLAYCLNDGECFVIETLTGSHKHCKCKEGYQGVRCDOFL 47

RESULT 2
US-09-817-647-8
; Sequence 8, Application US/09817647
; Patent No. US2002008229A1
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
; Ligands and Uses Therefor
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: WinPatIn (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/817,647
; FILING DATE: 26-Mar-2001
; CLASSIFICATION: <Unknown>
; PRIOR APPLICATION NUMBER: 09/107,979
; FILING DATE: <Unknown>
; ATTORNEY/AGENT INFORMATION:
; NAME: Conley, Deirdre L.
; REGISTRATION NUMBER: 36,487
; REFERENCE/DOCKET NUMBER: P1084R1-2
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650/225-2066
; TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 8:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 47 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
; FEATURE:
; NAME/KEY: NRG3 EGF-like domain/amino acid seq.
; LOCATION: 1-47
; IDENTIFICATION METHOD:
; OTHER INFORMATION:
; SEQUENCE DESCRIPTION: SEQ ID NO: 8:
US-09-817-647-8
Query Match 100.0%; Score 47; DB 9; Length 47;
Best Local Similarity 100.0%; Pred. No. 1.5e-43;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HFKPCRDKLAYCLNDGECFVIETLTGSHKHCKCKEGYQGVRCDOFL 47
Db 1 HFKPCRDKLAYCLNDGECFVIETLTGSHKHCKCKEGYQGVRCDOFL 47

RESULT 3
US-09-817-647-4
; Sequence 4, Application US/09817647
; Patent No. US2002008229A1
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
; Ligands and Uses Therefor
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: WinPatIn (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/817,647
; FILING DATE: 26-Mar-2001
; CLASSIFICATION: <Unknown>
; PRIOR APPLICATION NUMBER: 09/107,979
; FILING DATE: <Unknown>
; ATTORNEY/AGENT INFORMATION:
; NAME: Conley, Deirdre L.
; REGISTRATION NUMBER: 36,487
; REFERENCE/DOCKET NUMBER: P1084R1-2
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650/225-2066
; TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 4:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 47 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
; FEATURE:
; NAME/KEY: NRG3 EGF-like domain/amino acid seq.
; LOCATION: 1-47
; IDENTIFICATION METHOD:
; OTHER INFORMATION:
; SEQUENCE DESCRIPTION: SEQ ID NO: 4:
US-09-817-647-4
Query Match 100.0%; Score 47; DB 9; Length 47;
Best Local Similarity 100.0%; Pred. No. 1.5e-43;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HFKPCRDKLAYCLNDGECFVIETLTGSHKHCKCKEGYQGVRCDOFL 47
Db 1 HFKPCRDKLAYCLNDGECFVIETLTGSHKHCKCKEGYQGVRCDOFL 47

RESULT 4
US-09-817-647-8
; Sequence 8, Application US/09817647
; Patent No. US2002008229A1
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
; Ligands and Uses Therefor
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.

STREET: 1 DNA Way
CITY: South San Francisco
STATE: California
COUNTRY: USA
ZIP: 94080
COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WinFatin (Genentech)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/877,665
FILING DATE: 08-Jun-2001
CLASSIFICATION: <Unknown>
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/09/109,206
FILING DATE: 30-Jun-1998
ATTORNEY/AGENT INFORMATION:
NAME: Conley, Deirdre L.
REGISTRATION NUMBER: 36,487
REFERENCE/DOCKET NUMBER: P1084R1-1
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650/225-2066
TELEFAX: 650/952-9881
INFORMATION FOR SEQ ID NO: 8:
SEQUENCE CHARACTERISTICS:
LENGTH: 47 amino acids
TYPE: Amino Acid
TOPOLOGY: Linear
FEATURE:
NAME/KEY: NR3 EGF-like domain/amino acid seq.
LOCATION: 1-47
IDENTIFICATION METHOD:
OTHER INFORMATION:
SEQUENCE DESCRIPTION: SEQ ID NO: 8:

Query Match 100.0%; Score 47; DB 9; Length 47;
Best Local Similarity 100.0%; Pred. No. 1.5e-43;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 47
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DB 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 47

RESULT 5
US-10-136-573A-4
; Sequence 4, Application US/10136573A
; Publication No. US20020161200A1
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J.
; APPLICANT: Mark, Melanie Rose
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related Ligands and
; TITLE OF INVENTION: Uses Therefor
; FILE REFERENCE: P1084R1C2
; CURRENT APPLICATION NUMBER: US/10/136,573A
; CURRENT FILING DATE: 2002-04-29
; PRIOR APPLICATION NUMBER: US 09/480,977
; PRIOR FILING DATE: 2000-01-11
; PRIOR APPLICATION NUMBER: US 08/899,437
; PRIOR FILING DATE: 1997-07-24
; PRIOR APPLICATION NUMBER: US 60/052,019
; PRIOR FILING DATE: 1997-07-09
; NUMBER OF SEQ ID NOS: 23
; SEQ ID NO 4
; LENGTH: 47
; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-136-573A-4
Query Match 100.0%; Score 47; DB 13; Length 47;

Best Local Similarity 100.0%; Pred. No. 1.5e-43;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 47
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DB 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 47

RESULT 6
US-10-136-573A-8
; Sequence 8, Application US/10136573A
; Publication No. US20020161200A1
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J.
; APPLICANT: Mark, Melanie Rose
; APPLICANT: Zhang, Dong Xiao
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related Ligands and
; TITLE OF INVENTION: Uses Therefor
; FILE REFERENCE: P1084R1C2
; CURRENT APPLICATION NUMBER: US/10/136,573A
; CURRENT FILING DATE: 2002-04-29
; PRIOR APPLICATION NUMBER: US 09/480,977
; PRIOR FILING DATE: 2000-01-11
; PRIOR APPLICATION NUMBER: US 08/899,437
; PRIOR FILING DATE: 1997-07-24
; PRIOR APPLICATION NUMBER: US 60/052,019
; PRIOR FILING DATE: 1997-07-09
; NUMBER OF SEQ ID NOS: 23
; SEQ ID NO 8
; LENGTH: 47
; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-136-573A-8

Query Match 100.0%; Score 47; DB 13; Length 47;
Best Local Similarity 100.0%; Pred. No. 1.5e-43;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 47
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DB 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 47

RESULT 7
US-10-215-862-4
; Sequence 4, Application US/10215862
; Publication No. US20030036166A1
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J.
; APPLICANT: Mark, Melanie Rose
; APPLICANT: Zhang, Dong Xiao
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related Ligands and
; TITLE OF INVENTION: Uses Therefor
; FILE REFERENCE: P1084R1D2C1
; CURRENT APPLICATION NUMBER: US/10/215,862
; CURRENT FILING DATE: 2002-09-24
; PRIOR APPLICATION NUMBER: US 09/126,663
; PRIOR FILING DATE: 1998-07-30
; PRIOR APPLICATION NUMBER: US 08/899,437
; PRIOR FILING DATE: 1997-07-24
; PRIOR APPLICATION NUMBER: US 60/052,019
; PRIOR FILING DATE: 1997-07-09
; NUMBER OF SEQ ID NOS: 23
; SEQ ID NO 4
; LENGTH: 47
; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-215-862-4

Query Match 100.0%; Score 47; DB 14; Length 47;
Best Local Similarity 100.0%; Pred. No. 1.5e-43;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY	1	HFKECRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL	47
Db	1	HFKECRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL	47
RESULT 8			
US-10-215-862-8			
; Sequence 8, Application US/10215862			
; Publication No. US20030036166A1			
; GENERAL INFORMATION:			
; APPLICANT: Godowski, Paul J.			
; APPLICANT: Mark, Melanie Rose			
; APPLICANT: Zhang, Dong Xiao			
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related Ligands and			
; TITLE OF INVENTION: Uses Therefor			
; FILE REFERENCE: P1084RID2C1			
; CURRENT APPLICATION NUMBER: US/10/215,862			
; CURRENT FILING DATE: 2002-09-24			
; PRIOR APPLICATION NUMBER: US 09/126,663			
; PRIOR FILING DATE: 1998-07-30			
; PRIOR APPLICATION NUMBER: US 08/899,437			
; PRIOR FILING DATE: 1997-07-24			
; PRIOR APPLICATION NUMBER: US 60/052,019			
; PRIOR FILING DATE: 1997-07-09			
; NUMBER OF SEQ ID NOS: 23			
; SEQ ID NO 8			
; LENGTH: 47			
; TYPE: PRT			
; ORGANISM: Homo sapiens			
US-10-215-862-8			
Query Match 100.0%; Score 47; DB 14; Length 47;			
Best Local Similarity 100.0%; Pred. No. 1.5e-43;			
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;			
QY	1	HFKECRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL	47
Db	1	HFKECRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL	47
RESULT 9			
US-10-240-411-6			
; Sequence 6, Application US/10240411			
; Publication No. US20040121326A1			
; GENERAL INFORMATION:			
; APPLICANT: Harari, Daniel			
; APPLICANT: Varden, Yosef			
; TITLE OF INVENTION: NOVEL GROWTH FACTOR WHICH ACTS THROUGH ERB B-4 RECEPTOR TYROSINE			
; TITLE OF INVENTION: SEQUENCES ENCODING SAME AND USES THEREOF			
; FILE REFERENCE: 01/21918			
; CURRENT APPLICATION NUMBER: US/10/240,411			
; CURRENT FILING DATE: 2003-05-16			
; PRIOR APPLICATION NUMBER: US 09/553,769			
; PRIOR FILING DATE: 2000-04-21			
; NUMBER OF SEQ ID NOS: 20			
; SOFTWARE: PatentIn version 3.0			
; SEQ ID NO 6			
; LENGTH: 48			
; TYPE: PRT			
; ORGANISM: Mus musculus			
US-10-240-411-6			
Query Match 100.0%; Score 47; DB 16; Length 48;			
Best Local Similarity 100.0%; Pred. No. 1.6e-43;			
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;			
QY	1	HFKECRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL	47
Db	2	HFKECRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL	48
RESULT 10			
US-10-609-370-2			
; Sequence 2, Application US/10609370			
; Publication No. US20040048295A1			
; GENERAL INFORMATION:			
; APPLICANT: Young et al.			
; TITLE OF INVENTION: Heregulin-Like Factor			
; FILE REFERENCE: PF383D1			
; CURRENT APPLICATION NUMBER: US/10/609,370			
; CURRENT FILING DATE: 2003-07-01			
; PRIOR APPLICATION NUMBER: 09/097,681			
; PRIOR FILING DATE: 1998-06-16			
; PRIOR APPLICATION NUMBER: 60/049,942			
; PRIOR FILING DATE: 1997-06-17			
; NUMBER OF SEQ ID NOS: 22			
; SOFTWARE: PatentIn version 3.2			
; SEQ ID NO 2			
; LENGTH: 157			
; TYPE: PRT			
; ORGANISM: Homo sapiens			
US-10-609-370-2			
Query Match 100.0%; Score 47; DB 15; Length 157;			
Best Local Similarity 100.0%; Pred. No. 4.4e-43;			
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;			
QY	1	HFKECRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL	47
Db	31	HFKECRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL	77
RESULT 11			
US-09-817-647-7			
; Sequence 7, Application US/09817647			
; Patent No. US20020082229A1			
; GENERAL INFORMATION:			
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao			
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related			
; TITLE OF INVENTION: Ligands and Uses Therefor			
; NUMBER OF SEQUENCES: 23			
; CORRESPONDENCE ADDRESS:			
; ADDRESSEE: Genentech, Inc.			
; STREET: 1 DNA Way			
; CITY: South San Francisco			
; STATE: California			
; COUNTRY: USA			
; ZIP: 94080			
; COMPUTER READABLE FORM:			
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk			
; COMPUTER: IBM PC compatible			
; OPERATING SYSTEM: PC-DOS/MS-DOS			
; SOFTWARE: Winpatin (Genentech)			
; CURRENT APPLICATION DATA:			
; APPLICATION NUMBER: US/09/817,647			
; FILING DATE: 26-Mar-2001			
; CLASSIFICATION: <Unknown>			
; PRIOR APPLICATION DATA:			
; APPLICATION NUMBER: 09/107,979			
; FILING DATE: <Unknown>			
; ATTORNEY/AGENT INFORMATION:			
; NAME: Conley, Deirdre L.			
; REGISTRATION NUMBER: 36,487			
; REFERENCE/DOCKET NUMBER: P1084R1-2			
; TELECOMMUNICATION INFORMATION:			
; TELEPHONE: 650/225-2066			
; TELEFAX: 650/952-9881			
; INFORMATION FOR SEQ ID NO: 7:			
; SEQUENCE CHARACTERISTICS:			
; LENGTH: 360 amino acids			
; TYPE: Amino Acid			
; TOPOLOGY: Linear			
; FEATURE:			
; NAME/KEY: hNRG3 extracellular domain/Amino AcidSeq			
; LOCATION: 1-360			
; IDENTIFICATION METHOD:			

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;
; OTHER INFORMATION:
; SEQUENCE DESCRIPTION: SEQ ID NO: 7:
US-09-817-647-7

Query Match      100.0%; Score 47; DB 9; Length 360;
Best Local Similarity 100.0%; Pred. No. 9e-43;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 47
DB 286 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 332

RESULT 12
US-09-877-665-7
; Sequence 7, Application US/09877665
; Patent No. US20020164680A1
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
; Ligands and Uses Therefor
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: WinPatIn (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/877,665
; FILING DATE: 08-Jun-2001
; CLASSIFICATION: <Unknown>
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US/09/109,206
; FILING DATE: 30-Jun-1998
; ATTORNEY/AGENT INFORMATION:
; NAME: Conley, Deirdre L.
; REGISTRATION NUMBER: 36,487
; REFERENCE/DOCKET NUMBER: P1084R1-1
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650/225-2066
; TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 7:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 360 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
; FEATURE:
; NAME/KEY: hNRG3 extracellular domain/Amino AcidSeq
; LOCATION: 1-360
; IDENTIFICATION METHOD:
; OTHER INFORMATION:
; SEQUENCE DESCRIPTION: SEQ ID NO: 7:
US-09-877-665-7

Query Match      100.0%; Score 47; DB 9; Length 360;
Best Local Similarity 100.0%; Pred. No. 9e-43;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 47
DB 286 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 332

RESULT 13
US-10-136-573A-7
; Sequence 7, Application US/10136573A
```

```
; Publication No. US20020161200A1
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J.
; APPLICANT: Mark, Melanie Rose
; APPLICANT: Zhang, Dong Xiao
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related Ligands and
; TITLE OF INVENTION: Uses Therefor
; FILE REFERENCE: P1084R1C2
; CURRENT APPLICATION NUMBER: US/10/136,573A
; CURRENT FILING DATE: 2002-04-29
; PRIOR APPLICATION NUMBER: US 09/480,977
; PRIOR FILING DATE: 2000-01-11
; PRIOR APPLICATION NUMBER: US 08/899,437
; PRIOR FILING DATE: 1997-07-24
; PRIOR APPLICATION NUMBER: US 60/052,019
; PRIOR FILING DATE: 1997-07-09
; NUMBER OF SEQ ID NOS: 23
; SEQ ID NO 7
; LENGTH: 360
; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-136-573A-7
```

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Query Match      100.0%; Score 47; DB 13; Length 360;
Best Local Similarity 100.0%; Pred. No. 9e-43;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 47
DB 286 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 332
```

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RESULT 14
US-10-215-862-7
; Sequence 7, Application US/10215862
; Publication No. US20030036166A1
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J.
; APPLICANT: Mark, Melanie Rose
; APPLICANT: Zhang, Dong Xiao
; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related Ligands and
; TITLE OF INVENTION: Uses Therefor
; FILE REFERENCE: P1084R1D2C1
; CURRENT APPLICATION NUMBER: US/10/215,862
; CURRENT FILING DATE: 2002-09-24
; PRIOR APPLICATION NUMBER: US 09/126,663
; PRIOR FILING DATE: 1998-07-30
; PRIOR APPLICATION NUMBER: US 08/899,437
; PRIOR FILING DATE: 1997-07-24
; PRIOR APPLICATION NUMBER: US 60/052,019
; PRIOR FILING DATE: 1997-07-09
; NUMBER OF SEQ ID NOS: 23
; SEQ ID NO 7
; LENGTH: 360
; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-215-862-7
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Query Match      100.0%; Score 47; DB 14; Length 360;
Best Local Similarity 100.0%; Pred. No. 9e-43;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 47
DB 286 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 332
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RESULT 15
US-09-817-647-3
; Sequence 3, Application US/09817647
; Patent No. US2002008229A1
; GENERAL INFORMATION:
; APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
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Tue Nov 2 14:15:35 2004

;; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
;; Ligands and Uses Therefor
;;
;; NUMBER OF SEQUENCES: 23
;; CORRESPONDENCE ADDRESS:
;; ADDRESSEE: Genentech, Inc.
;; STREET: 1 DNA Way
;; CITY: South San Francisco
;; STATE: California
;; COUNTRY: USA
;; ZIP: 94080
;;
;; COMPUTER READABLE FORM:
;; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
;; COMPUTER: IBM PC compatible
;; OPERATING SYSTEM: PC-DOS/MS-DOS
;; SOFTWARE: WinPatIn (Genentech)
;;
;; CURRENT APPLICATION DATA:
;; APPLICATION NUMBER: US/09/817,647
;; FILING DATE: 26-Mar-2001
;; CLASSIFICATION: <Unknown>
;;
;; PRIOR APPLICATION DATA:
;; APPLICATION NUMBER: 09/107,979
;; FILING DATE: <Unknown>
;; ATTORNEY/AGENT INFORMATION:
;; NAME: Conley, Deirdre L.
;; REGISTRATION NUMBER: 36,487
;; REFERENCE/DOCKET NUMBER: F1084R1-2
;; TELECOMMUNICATION INFORMATION:
;; TELEPHONE: 650/225-2066
;; TELEFAX: 650/952-9881
;;
;; INFORMATION FOR SEQ ID NO: 3:
;; SEQUENCE CHARACTERISTICS:
;; LENGTH: 362 amino acids
;; TYPE: Amino Acid
;; TOPOLOGY: Linear
;;
;; FEATURE:
;; NAME/KEY: mNRG3 extracellular domainAmino acid seq
;; LOCATION: 1-362
;; IDENTIFICATION METHOD:
;; OTHER INFORMATION:
;; SEQUENCE DESCRIPTION: SEQ ID NO: 3:
US-09-817-647-3

Query Match 100.0%; Score 47; DB 9; Length 362;
Best Local Similarity 100.0%; Pred. No. 9.1e-43; Indels 0; Gaps 0;
Matches 47; Conservative 0; Mismatches 0;

QY 1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDDQFL 47
|||||
Db 288 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDDQFL 334
|||||

Search completed: November 2, 2004, 13:57:13
Job time : 127 secs

GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: November 2, 2004, 13:37:06 ; Search time 38 Seconds
(without alignments)

119.005 Million cell updates/sec

Title: US-09-107-979-4

Perfect score: 47

Sequence: 1 HFPCRDKDLAYCLNDGECF.....SHKHCRCKEGYQGVRCDOFL 47

Scoring table: OLIGO

Gapop 60.0 , Gapext 60.0

Searched: 283416 seqs, 96216763 residues

Word size : 0

Total number of hits satisfying chosen parameters: 283416

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Listing first 45 summaries

Database :

PIR 79.*

1: PIR1.*

2: PIR2.*

3: PIR3.*

4: PIR4.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	47	100.0	713	2 T44447	neuregulin-3 [impo
2	7	14.9	181	1 R5MX5	ribosomal protein
3	7	14.9	406	2 S59948	aminomethyltransf
4	7	14.9	407	2 S56660	aminomethyltransf
5	7	14.9	408	2 H86252	hypothetical prote
6	7	14.9	408	2 S56661	aminomethyltransf
7	7	14.9	408	2 S38370	aminomethyltransf
8	7	14.9	1264	2 T19545	hypothetical prote
9	7	14.9	1790	1 MWFB1	laminin beta-1 cha
10	6	12.8	118	2 JC2568	mray protein - Rhi
11	6	12.8	149	2 B48083	chromosome segrega
12	6	12.8	157	2 F95992	azlBCD operon tran
13	6	12.8	161	1 A44462	allophycocyanin al
14	6	12.8	161	2 S33623	probable translati
15	6	12.8	187	2 G71312	ribosomal protein
16	6	12.8	200	2 AE1637	hypothetical prote
17	6	12.8	202	2 F72220	phospho-N-acetylm
18	6	12.8	212	2 H69459	hypothetical prote
19	6	12.8	247	2 H83970	phospho-N-acetylm
20	6	12.8	260	2 T06326	malate dehydrogena
21	6	12.8	263	2 G98308	hypothetical prote
22	6	12.8	291	2 AD2974	conserved hypothet
23	6	12.8	300	2 G75436	conserved hypothet
24	6	12.8	306	1 JQ1395	phosphoribosylamin
25	6	12.8	313	2 A64069	1-phosphofructokin
26	6	12.8	313	2 T48057	proline-rich prote
27	6	12.8	313	2 T52077	proline-rich prote
28	6	12.8	321	2 A89890	phospho-N-muramic
29	6	12.8	324	1 C47691	phospho-N-acetylm

30 329 2 D87291
31 334 2 B72033
32 334 2 C86593
33 335 2 E69990
34 337 2 A11272
35 337 2 AB1636
36 353 1 E64581
37 353 2 B71930
38 358 1 PASPC
39 361 2 B82763
40 365 2 AD0111
41 366 2 G84574
42 379 2 G81712
43 404 2 C83072
44 405 2 AF2422
45 415 2 T09085

hypothetical prote
conserved hypothet
CT566 hypothetical
proteinase IV homo
proteinase homolog
proteinases homolo
phospho-N-acetylm
phospho-N-acetylm
fructose-bisphosph
phospho-N-acetylm
aminomethyltransf
hypothetical prote
1-deoxy-D-xylulose
conserved hypothet
N-acyl-L-amino aci
fructose-bisphosph

ALIGNMENTS

RESULT 1

T44447

neuregulin-3 [imported] - mouse

C:Species: Mus musculus (house mouse)

C:Date: 21-Jan-2000 #sequence_revision 21-Jan-2000 #text_change 09-Jul-2004

C:Accession: T44447

R:Zhang, D.; Sliwkowski, M.X.; Mark, M.; Frantz, G.; Akita, R.; Sun, Y.; Hillan, K.; Crox

Proc. Natl. Acad. Sci. U.S.A. 94, 9562-9567, 1997

A:Title: Neuregulin-3 (NRG3): A novel neural tissue-enriched protein that binds and activ

A:Reference number: 222773; MUID:97420720; PMID:9275162

A:Accession: T44447

A:Status: preliminary; translated from GB/EMBL/DBJ

A:Molecule type: mRNA

A:Residues: 1-713 <ZHA>

A:Cross-references: UNIPROT:O35181; EMBL:AF010130; NID:g2429163; PIDN:AAB70914.1; PID:g24

C:Genetics:

A:Gene: NRG3

C:Superfamily: mouse neuregulin-3

Query Match 100.0%; Score 47; DB 2; Length 713;

Best Local Similarity 100.0%; Pred. No. 2.1e-42;

Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 47

|||||

Db 288 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDOFL 334

RESULT 2

R5MX5

ribosomal protein L5 - Methanococcus vannielii

C:Species: Methanococcus vannielii

C:Date: 31-Mar-1991 #sequence_revision 31-Mar-1991 #text_change 09-Jul-2004

C:Accession: S05617

R:Auer, J.; Spicker, G.; Boeck, A.

J. Mol. Biol. 209, 21-36, 1989

A:Title: Organization and structure of the Methanococcus transcriptional unit homologous

S ribosomes.

A:Reference number: S05617; MUID:90040717; PMID:2530355

A:Accession: S05617

A:Molecule type: DNA

A:Residues: 1-181 <AUE>

A:Cross-references: UNIPROT:P14029; EMBL:X16720; NID:g44754; PIDN:CAA34693.1; PID:g44761

C:Superfamily: ribosomal protein L5/L11

C:Keywords: protein biosynthesis; ribosome

Query Match 14.9%; Score 7; DB 1; Length 181;

Best Local Similarity 100.0%; Pred. No. 3.9;

Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 21 VIETLTG 27

|||||

A;Cross-references: UNIPROT:P49364; EMBL:X74793; NID:g407474; PIDN:CAA52800.1; PID:g407474
 C;Superfamily: aminomethyltransferase
 C;Keywords: transferase

Query Match 14.9%; Score 7; DB 2; Length 408;
 Best Local Similarity 100.0%; Pred. No. 7.7;
 Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 5 CRDKDLA 11
 |||||
 Db 151 CRDKDLA 157

RESULT 8
 T19545
 hypothetical protein C29A12.4 - Caenorhabditis elegans
 C;Species: Caenorhabditis elegans
 C;Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 09-Jul-2004
 C;Accession: T19545
 R;Wilkinson, J.
 submitted to the EMBL Data Library, June 1996
 A;Reference number: Z19140
 A;Accession: T19545
 A;Status: preliminary; translated from GB/EMBL/DBDJ
 A;Molecule type: DNA
 A;Residues: 1-1264 <WIL>
 A;Cross-references: UNIPROT:Q18291; EMBL:Z73970; PIDN:CAA98243.1; GSPDB:GN00023; CESP:C29A12
 A;Experimental source: clone C29A12
 C;Genetics:
 A;Gene: CESP:C29A12.4
 A;Map position: 5
 A;Introns: 40/2; 92/2; 113/3; 169/3; 203/1; 227/3; 266/1; 319/3; 437/1; 636/1; 668/3; 703/1

Query Match 14.9%; Score 7; DB 2; Length 1264;
 Best Local Similarity 100.0%; Pred. No. 20;
 Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 13 CLNDGEC 19
 |||||
 Db 236 CLNDGEC 242

RESULT 9
 MMFFB1
 laminin beta-1 chain precursor - fruit fly (Drosophila melanogaster)
 N;Alternate names: laminin chain B1
 C;Species: Drosophila melanogaster
 C;Date: 30-Jun-1991 #sequence_revision 30-Jun-1991 #text_change 09-Jul-2004
 R;Montell, D.J.; Goodman, C.S.
 Cell 53, 463-473, 1988
 A;Title: Drosophila substrate adhesion molecule: sequence of laminin B1 chain reveals domain organization
 A;Reference number: A28783; MUID:88210471; PMID:3365769
 A;Accession: A28783
 A;Molecule type: mRNA
 A;Residues: 1-1790 <MONI>
 A;Cross-references: UNIPROT:P11046; EMBL:M19525
 R;Montell, D.J.; Goodman, C.S.
 submitted to the EMBL Data Library, June 1988
 A;Description: Drosophila substrate adhesion molecule: sequence of laminin B1 chain reveals domain organization
 A;Reference number: S14462
 A;Accession: S14462
 A;Molecule type: mRNA
 A;Residues: 1-667, 'L', 669-725, 'VT', 728-947, 950-1790 <MON2>
 A;Cross-references: EMBL:M19525; NID:g157801; PIDN:AAA28663.1; PID:g157802
 C;Genetics:
 A;Gene: lamB1
 A;Cross-references: FlyBase:FBgn0002527
 A;Map position: 2L 28D
 C;Complex: Laminins are trimers of an alpha-type, a beta-type, and a gamma-type laminin
 C;Function:
 A;Description: interact with cells and with other basement membrane proteins to promote cell adhesion
 C;Superfamily: laminin beta-1 chain; laminin-type EGF-like homology

C;Keywords: basement membrane; calcium binding; cell binding; coiled coil; extracellular matrix
 F;1-26/Domain: signal sequence #status predicted <SIG>
 F;27-1790/Product: laminin beta-1 chain #status predicted <MAT>
 F;27-288/Domain: VI <DOM6>
 F;289-561/Domain: V <DOM5>
 F;290-354/Domain: laminin-type EGF-like homology <LE01>
 F;355-411/Domain: laminin-type EGF-like homology <LE02>
 F;420-477/Domain: laminin-type EGF-like homology <LE03>
 F;480-528/Domain: laminin-type EGF-like homology <LE04>
 F;531-561/Domain: laminin-type EGF-like homology #status atypical <LE05>
 F;562-789/Domain: IV <DOM4>
 F;643-645/Region: cell attachment (R-G-D) motif
 F;790-1189/Domain: III <DOM3>
 F;791-836/Domain: laminin-type EGF-like homology <LE06>
 F;839-882/Domain: laminin-type EGF-like homology <LE07>
 F;885-932/Domain: laminin-type EGF-like homology <LE08>
 F;935-990/Domain: laminin-type EGF-like homology <LE09>
 F;968-972/Region: cell adhesion #status predicted
 F;993-1042/Domain: laminin-type EGF-like homology <LE10>
 F;1045-1093/Domain: laminin-type EGF-like homology <LE11>
 F;1096-1141/Domain: laminin-type EGF-like homology <LE12>
 F;1144-1188/Domain: laminin-type EGF-like homology <LE13>
 F;1190-1407/Domain: II <DOM2>
 F;1408-1434/Domain: alpha <ADP>
 F;1435-1790/Domain: I <DOM1>
 F;51-56/Disulfide bonds: #status predicted
 F;140,203,234,489,593,1053,1248,1303,1332,1343,1475,1495,1517,1583,1646,1705/Binding site
 F;1191,1194,1788/Disulfide bonds: interchain #status predicted

Query Match 14.9%; Score 7; DB 1; Length 1790;
 Best Local Similarity 100.0%; Pred. No. 27;
 Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 39 QGVRCDO 45
 |||||
 Db 1073 QGVRCDO 1079

RESULT 10
 JC2568
 wavy protein - Rhizobium meliloti (fragment)
 C;Species: Rhizobium meliloti
 C;Date: 13-Jun-1995 #sequence_revision 14-Jul-1995 #text_change 03-Nov-2000
 C;Accession: JC2568
 R;Leach, F.; Wacks, D.B.; Signer, E.R.
 Gene 148, 87-90, 1994
 A;Title: Rhizobium meliloti homologs of Escherichia coli mur genes.
 A;Reference number: JC2567; MUID:95011665; PMID:7926844
 A;Accession: JC2568
 A;Molecule type: DNA
 A;Residues: 1-118 <LEA>
 A;Cross-references: GB:L25875
 C;Genetics:
 A;Gene: wavy
 C;Superfamily: phospho-N-acetylmuramoyl-pentapeptide-transferase

Query Match 12.8%; Score 6; DB 2; Length 118;
 Best Local Similarity 100.0%; Pred. No. 32;
 Matches 6; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 20 FVIELT 25
 |||||
 Db 69 FVIELT 74

RESULT 11
 B48083
 chromosome segregation protein CSE2 - yeast (Saccharomyces cerevisiae)
 N;Alternate names: protein N2046; protein YNR010W
 C;Species: Saccharomyces cerevisiae
 C;Date: 26-May-1994 #sequence_revision 26-May-1994 #text_change 09-Jul-2004
 C;Accession: B48083; S45132; S48347; S63336; S43944
 R;Xiao, Z.; McGrew, J.T.; Schroeder, A.J.; Fitzgerald-Hayes, M.

Mol. Cell. Biol. 13, 4691-4702, 1993	A:Molecule type: DNA	A:Residues: 1-157 <KUN>	A:Cross-references: UNIPROT:Q07920; GB:Z99117; GB:AL009126; NID:G2634966; PIDN:CAB14613.
A:Title: CSB1 and CSE2, two new genes required for accurate mitotic chromosome segregation	A:Reference number: A48083; MUID:93330263; PMID:8336709	A:Experimental source: strain 168	R:Belitsky, B.R.; Gustafsson, M.C.U.; Sonenshein, A.L.; von Wachenfeldt, C.
A:Accession: B48083	A:Molecule type: DNA	J. Bacteriol. 179, 5448-5457, 1997	A:Title: An lrp-like gene of <i>Bacillus subtilis</i> involved in branched-chain amino acid tra
A:Residues: 1-149 <XIA>	A:Cross-references: UNIPROT:P33308; GB:J114839; NID:G349590; PIDN:AAA34532.1; PID:G349591	A:Reference number: Z22837; MUID:97431495; PMID:9287000	A:Accession: T44776
A:Description: Twelve open reading frames revealed on the 23.6 kbp segment flanking the	A:Status: preliminary; translated from GB/EMBL/DBBJ	A:Status: preliminary; translated from GB/EMBL/DBBJ	A:Molecule type: DNA
A:Reference number: S45119	A:Residues: 1-149 <VER>	A:Residues: 1-157 <BEL>	A:Cross-references: EMBL:X77395; NID:G496717; PIDN:CAA54578.1; PID:G496726
A:Accession: S45132	A:Cross-references: EMBL:X77395; NID:G496717; PIDN:CAA54578.1; PID:G496726	A:Experimental source: strain 1A1	A:Gene: azlB
A:Molecule type: DNA	R:Verhasselt, P.; Aert, R.; Voet, M.; Volckaert, G.	C:Superfamily: regulatory protein asnC	Query Match 12.8%; Score 6; DB 2; Length 157;
A:Residues: 1-149 <VER>	Yeast 10, 1355-1361, 1994	Best Local Similarity 100.0%; Pred. No. 41;	Matches 6; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
A:Cross-references: EMBL:X77395; NID:G496717; PIDN:CAA54578.1; PID:G496726	A:Title: Twelve open reading frames revealed in the 23.6 kb segment flanking the centrom	A:Status: nucleic acid sequence not shown; translation not shown	QY 24 TLTGSH 29
A:Reference number: S48347	A:Accession: S48347	A:Molecule type: DNA	Db 101 TLTGSH 106
A:Status: nucleic acid sequence not shown; translation not shown	A:Residues: 1-149 <VE2>	A:Cross-references: EMBL:X77395; NID:G496717; PIDN:CAA54578.1; PID:G496726	RESULT 13
A:Molecule type: DNA	A:Note: the nucleotide sequence was submitted to the EMBL Data Library, January 1994	A:Reference number: S62910	A44462
A:Residues: 1-149 <VE2>	submitted to the Protein Sequence Database, April 1996	A:Molecule type: DNA	allophycocyanin alpha chain - <i>Synechocystis</i> sp. (strain PCC 6803)
A:Cross-references: EMBL:X77395; NID:G496717; PIDN:CAA54578.1; PID:G496726	A:Accession: S63336	A:Cross-references: SGD:S0005293; MIPS:YNR010W	A:Variety: PCC 6803
A:Note: the nucleotide sequence was submitted to the EMBL Data Library, January 1994	A:Molecule type: DNA	A:Map position: 14R	C:Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 09-Jul-2004
R:Aert, R.; Verhasselt, P.; Voet, M.; Volckaert, G.	A:Residues: 1-149 <VER>	C:Superfamily: Saccharomyces chromosome segregation protein CSE2	C:Accession: A44462; S75012
submitted to the Protein Sequence Database, April 1996	A:Cross-references: EMBL:X77395; NID:G496717; PIDN:CAA54578.1; PID:G496726	C:Keywords: DNA binding; leucine zipper; nucleus	R:Su, X.; Fraenkel, P.G.; Bogorad, L.
A:Reference number: S62910	A:Status: nucleic acid sequence not shown; translation not shown	A:Cross-references: EMBL:X77395; NID:G496717; PIDN:CAA54578.1; PID:G496726	J. Biol. Chem. 267, 22944-22950, 1992
A:Accession: S63336	A:Accession: S63336	A:Reference number: A44462; MUID:93054612; PMID:1429645	A:Title: Excitation energy transfer from phycocyanin to chlorophyll in an <i>apca</i> -defective
A:Molecule type: DNA	A:Cross-references: EMBL:X77395; NID:G496717; PIDN:CAA54578.1; PID:G496726	A:Molecule type: mRNA	A:Accession: A44462
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R:Aert, R.; Verhasselt, P.; Voet, M.; Volckaert, G.	A:Accession: F69592	A:Note: sequence extracted from NCBI backbone (NCBI:118109)	A:Experimental source: PCC 6803
submitted to the Protein Sequence Database, April 1996	A:Title: The complete genome sequence of the Gram-positive bacterium <i>Bacillus subtilis</i> .	A:Note: the nucleotide sequence was submitted to the EMBL Data Library, June 1996	R:Kaneko, T.; Sato, S.; Kotani, H.; Tanaka, A.; Asamizu, E.; Nakamura, Y.; Miyajima, N.;
A:Reference number: S62910	A:Reference number: A69580; MUID:98044033; PMID:9384377	A:Gene: <i>apca</i>	O, K.; Okumura, S.; Shimpo, S.; Wada, T.; Watanabe, A.; Yamada, M.; Yasuda
A:Accession: S63336	A:Status: preliminary; nucleic acid sequence not shown; translation not shown	C:Superfamily: phycocyanin	DNA Res. 3, 109-136, 1996
A:Molecule type: DNA	A:Reference number: A69580; MUID:98044033; PMID:9384377	C:Keywords: chromoprotein; photosynthesis; phycocyanobilin	A:Title: Sequence analysis of the genome of the unicellular cyanobacterium <i>Synechocystis</i>
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submitted to the Protein Sequence Database, April 1996	A:Title: The complete genome sequence of the Gram-positive bacterium <i>Bacillus subtilis</i> .	A:Residues: 1-161 <KAN>	A:Residues: 1-161 <KAN>
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 C:Accession: S33623
 R:DiMagno, L.; Haselkorn, R.
 Plant Mol. Biol. 21, 835-845, 1993
 A:Title: Isolation and characterization of the genes encoding allophycocyanin subunits a
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 Db 41 ETLTGS 46

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 Science 281, 375-388, 1998
 A:Title: Complete genome sequence of *Treponema pallidum*, the syphilis spirochete.
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Search completed: November 2, 2004, 13:46:13
 Job time : 40 secs

GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: November 2, 2004, 13:29:11 ; Search time 193 Seconds
(without alignments)
140.117 Million cell updates/sec

Title: US-09-107-979-4

Perfect score: 47

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Scoring table: OLIGO

Gapop 60.0 , Gapext 60.0

Searched: 1825181 seqs, 575374646 residues

Word size : 0

Total number of hits satisfying chosen parameters: 1825181

Minimum DB seq length: 0

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Post-processing: Listing first 45 summaries

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1: uniprot_sprot.*

2: uniprot_trembl.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB	ID	Description
1	47	100.0	713	1	NRG3_MOUSE	O35181 mus musculus
2	47	100.0	720	1	NRG3_HUMAN	P56975 homo sapien
3	7	14.9	71	2	Q74F78	Q74f78 geobacter s
4	7	14.9	71	2	AAR33796	Aar33796 geobacter
5	7	14.9	127	2	Q947L6	Q947L6 beta vulgar
6	7	14.9	181	1	RL5_METVA	P14029 methanococ
7	7	14.9	186	2	Q86DG8	Q86dg8 heterodera
8	7	14.9	368	2	Q8LNG9	Q8lng9 oryza sativ
9	7	14.9	401	2	Q7Q1J6	Q7q1j6 anopheles g
10	7	14.9	403	1	GCST_MOUSE	Q8cf82 mus musculu
11	7	14.9	406	1	GCST_SOLTU	P54260 solanum tub
12	7	14.9	406	2	Q6C340	Q6c340 solanum li
13	7	14.9	407	1	GCST_FLAAN	Q49849 flaveria an
14	7	14.9	407	1	GCST_FLAAPR	P49363 flaveria pr
15	7	14.9	407	1	GCST_FLAATR	O23936 flaveria tr
16	7	14.9	408	1	GCST_ARATH	O65336 arabidopsis
17	7	14.9	408	1	GCST_PEA	P49364 pisum sativ
18	7	14.9	435	2	Q7XPR2	Q7xpr2 oryza sativ
19	7	14.9	435	2	Q981J4	Q981j4 rhizobium l
20	7	14.9	509	2	Q6UXI9	Q6uxi9 homo sapien
21	7	14.9	509	2	RAQ98702	Aa98702 homo sapi
22	7	14.9	644	2	Q7QWT5	Q7qwt5 giardia lam
23	7	14.9	944	2	Q6N7N7	Q6n7n7 rhodopseu
24	7	14.9	944	2	CAE27661	Cae27661 rhodopseu
25	7	14.9	1026	2	Q8SWY0	Q8swy0 drosophila
26	7	14.9	1560	2	Q18291	Q18291 caenorhabdi
27	7	14.9	1790	1	LMBI_DROME	Lil046 drosophila
28	6	12.8	77	2	Q6UCQ8	Q6ucq8 uncultured
29	6	12.8	77	2	AAR05332	Aar05332 uncultured
30	6	12.8	96	2	Q8CSS4	Q8css4 staphylococ
31	6	12.8	104	2	Q9BDC5	Q9bdc5 macaca fasc

32 6 12.8 108 2 Q6JGX3
33 6 12.8 108 2 Q6JGX1
34 6 12.8 108 2 AAS57675
35 6 12.8 108 2 AAS57683
36 6 12.8 130 2 Q8P663
37 6 12.8 148 2 Q8ZCX4
38 6 12.8 148 2 Q8GXW3
39 6 12.8 148 2 Q6D9T1
40 6 12.8 148 2 BAC99531
41 6 12.8 148 2 BAC99402
42 6 12.8 149 1 CSE2_YEAST
43 6 12.8 149 2 AAS56748
44 6 12.8 155 2 Q8RYI7
45 6 12.8 157 1 AZLE_BACSU

ALIGNMENTS

RESULT 1
NRG3_MOUSE
ID NRG3_MOUSE STANDARD; PRT; 713 AA.
AC O35181;
DT 16-OCT-2001 (Rel. 40, Created)
DT 16-OCT-2001 (Rel. 40, Last sequence update)
DT 05-JUL-2004 (Rel. 44, Last annotation update)
DE Pro-neuregulin-3 precursor (Pro-NRG3) [Contains: Neuregulin-3 (NRG-3)].
GN Name=Nrg3;
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Brain;
RX MEDLINE=97420720; PubMed=9275162;
RA Zhang D., Sliwkowski M.X., Mark M., Frantz G., Akita R., Sun Y., Hillan K., Crowley C., Brush J., Godowski P.J.;
RA "Neuregulin-3 (NRG3): a novel neural tissue-enriched protein that binds and activates ErbB4.";
RL Proc. Natl. Acad. Sci. U.S.A. 94:9562-9567(1997).
CC -!- FUNCTION: Direct ligand for the ERBB4 tyrosine kinase receptor. Binding results in ligand-stimulated tyrosine phosphorylation and activation of the receptor. Does not bind to the EGF receptor, ERBB2 or ERBB3 receptors.
CC -!- SUBCELLULAR LOCATION: Exists as an type I membrane protein and as a proteolytically released soluble growth factor form. The membrane-bound form does not seem to be active (By similarity).
CC -!- TISSUE SPECIFICITY: Expressed in sympathetic, motor, and sensory neurons.
CC -!- DEVELOPMENTAL STAGE: Detected as early as 11 dpc. At 13 dpc detected mainly in the nervous system. At 16 dpc, detected in the brain, spinal cord, trigeminal, vestibular-cochlear, and spinal ganglia. In adults, expressed in spinal cord, and numerous brain regions.
CC -!- DOMAIN: The cytoplasmic domain may be involved in the regulation of trafficking and proteolytic processing. Regulation of the proteolytic processing involves initial intracellular domain dimerization (By similarity).
CC -!- DOMAIN: ERBB receptor binding is elicited entirely by the EGF-like domain (By similarity).
CC -!- PTM: Proteolytic cleavage close to the plasma membrane on the external face leads to the release of the soluble growth factor form (By similarity).
CC -!- PTM: Extensive glycosylation precedes the proteolytic cleavage (By similarity).
CC -!- SIMILARITY: Belongs to the neuregulin family.
CC -!- SIMILARITY: Contains 1 EGF-like domain.
CC This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its

use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See <http://www.isb-sib.ch/announce/>) or send an email to license@isb-sib.ch.

```
CC EMBL; AF010130; AAB70914.1; -.
CC PIR; T44447; T44447.
CC HSSP; P01133; 1JL9.
CC MGD; MGI:1097165; Nrg3.
CC GO; GO:0005515; F:protein binding; IPI.
CC GO; GO:0007243; P:protein kinase cascade; IDA.
CC InterPro; IPR000742; EGF_2.
CC InterPro; IPR006209; EGF-like.
CC InterPro; IPR002154; Neuregulin.
CC Pfam; PF00008; EGF; 1.
CC Pfam; PF02158; Neuregulin; 1.
CC PROSITE; PS00022; EGF_1; 1.
CC PROSITE; PS01186; EGF_2; 1.
CC PROSITE; PS00266; EGF_3; 1.
CC EGF-like domain; Growth factor; Multigene family; Transmembrane.
KW EGF-like domain; Growth factor; Multigene family; Transmembrane.
FT CHAIN 1 713
FT DOMAIN 1 361
FT TRANSMEM 1 362
FT DOMAIN 363 383
FT TRANSMEM 384 713
FT DOMAIN 105 287
FT DOMAIN 288 331
FT DOMAIN 13 21
FT DOMAIN 26 34
FT DOMAIN 127 135
FT DOMAIN 250 253
FT DOMAIN 254 263
FT DOMAIN 264 267
FT DISULFID 292 306
FT DISULFID 300 319
FT DISULFID 321 330
FT SEQUENCE 713 AA; 77369 MW; 9F7D1D5E7FC8DCF0 CRC64;

Query Match 100.0%; Score 47; DB 1; Length 713;
Best Local Similarity 100.0%; Pred. No. 5.3e-43;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCKCKEGYQGVRCDOFL 47
Db 288 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCKCKEGYQGVRCDOFL 334

RESULT 2
NRG3_HUMAN STANDARD; PRT; 720 AA.
ID NRG3_HUMAN
AC P56975;
DC 16-OCT-2001 (Rel. 40, Created)
DT 16-OCT-2001 (Rel. 40, Last sequence update)
DT 05-JUL-2004 (Rel. 44, Last annotation update)
DE Pro-neuregulin-3 precursor (Pro-NRG3) [Contains: Neuregulin-3 (NRG-3)].
GN Name=NRG3;
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RS SEQUENCE FROM N.A.
RC TISSUE=Fetal brain;
RX MEDLINE=97420720; PubMed=9275162;
RA Zhang D., Sliwkowski M.X., Mark M., Frantz G., Akita R., Sun Y., Hillan K., Crowley C., Brush J., Godowski P.J.;
RT "Neuregulin-3 (NRG3): a novel neural tissue-enriched protein that binds and activates ErbB4."
RL Proc. Natl. Acad. Sci. U.S.A. 94:9562-9567(1997).
CC -!- FUNCTION: Direct ligand for the ERBB4 tyrosine kinase receptor. Binding results in ligand-stimulated tyrosine phosphorylation and activation of the receptor. Does not bind to the EGF receptor,
```

```
CC ERBB2 or ERBB3 receptors.
CC -!- SUBCELLULAR LOCATION: Exists as an type I membrane protein and as a proteolytically released soluble growth factor form. The membrane-bound form does not seem to be active (By similarity).
CC -!- TISSUE SPECIFICITY: Highly expressed in most regions of the brain with the exception of corpus callosum. Expressed at lower level in testis. Not detected in heart, placenta, lung, liver, skeletal muscle, kidney, pancreas, spleen, thymus, prostate, ovary, small intestine, colon and peripheral blood leukocytes.
CC -!- DOMAIN: The cytoplasmic domain may be involved in the regulation of trafficking and proteolytic processing. Regulation of the proteolytic processing involves initial intracellular domain dimerization (By similarity).
CC -!- DOMAIN: ERBB receptor binding is elicited entirely by the EGF-like domain (By similarity).
CC -!- PTM: Proteolytic cleavage close to the plasma membrane on the external face leads to the release of the soluble growth factor form (By similarity).
CC -!- PTM: Extensive glycosylation precedes the proteolytic cleavage (By similarity).
CC -!- SIMILARITY: Belongs to the neuregulin family.
CC -!- SIMILARITY: Contains 1 EGF-like domain.
CC HSSP; P01133; 1JL9.
CC MIM; 605533; -.
CC GO; GO:0005576; C:extracellular; NAS.
CC GO; GO:0005887; C:integral to plasma membrane; NAS.
CC GO; GO:0008083; F:growth factor activity; NAS.
CC GO; GO:0030297; F:transmembrane receptor protein tyrosine kin. . . ; NAS.
CC GO; GO:0001558; P:regulation of cell growth; NAS.
CC GO; GO:0007170; P:transmembrane receptor protein tyrosine kin. . . ; NAS.
CC InterPro; IPR000742; EGF_2.
CC InterPro; IPR006209; EGF-like.
CC InterPro; IPR002154; IEGF.
CC Pfam; PF00008; EGF; 1.
CC Pfam; PF02158; Neuregulin; 1.
CC SMART; SM00181; EGF; 1.
CC PROSITE; PS00022; EGF_1; 1.
CC PROSITE; PS01186; EGF_2; 1.
CC PROSITE; PS00266; EGF_3; 1.
CC EGF-like domain; Growth factor; Multigene family; Transmembrane.
KW EGF-like domain; Growth factor; Multigene family; Transmembrane.
FT CHAIN 1 720
FT DOMAIN 1 359
FT TRANSMEM 361 381
FT DOMAIN 382 720
FT DOMAIN 105 285
FT DOMAIN 286 329
FT DOMAIN 5 8
FT DOMAIN 13 21
FT DOMAIN 26 34
FT DOMAIN 127 135
FT DOMAIN 252 260
FT DOMAIN 262 265
FT DISULFID 290 304
FT DISULFID 298 317
FT DISULFID 319 328
FT SEQUENCE 720 AA; 77900 MW; A4D6F10DD85A693 CRC64;

Query Match 100.0%; Score 47; DB 1; Length 720;
Best Local Similarity 100.0%; Pred. No. 5.3e-43;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCKCKEGYQGVRCDOFL 47
Db 286 HFPCRDKDLAYCLNDGECFVIETLTGSHKHCKCKEGYQGVRCDOFL 332

RESULT 3
Q74FY8 PRELIMINARY; PRT; 71 AA.
ID Q74FY8
AC Q74FY8;
```

05-JUL-2004 (TrEMBLrel. 27, Created)
05-JUL-2004 (TrEMBLrel. 27, Last sequence update)
05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
S4 domain protein.
ORFNames=GSU0464;
OS Bacterium sulfurreducens.
OC Bacteria; Proteobacteria; Deltaproteobacteria; Desulfuromonadales;
OC Geobacteraceae; Geobacter.
OX NCBI_TaxID=35554;
RN [1]
PN SEQUENCE FROM N.A.
RP STRAIN=PCA / ATCC 51573;
RX PubMed=14671304; DOI=10.1126/science.1088727;
RA Methe B.A., Nelson K.E., Eisen J.A., Paulsen I.T., Nelson W.C.,
RA Heidelberg J.F., Wu D., Wu M., Ward N.L., Beanan M.J., Dodson R.J.,
RA Madupu R., Brinkac L.M., Daugherty S.C., DeBoy R.T., Durkin A.S.,
RA Winn M.L., Kolonay J.F., Sullivan S.A., Haft D.H., Selengut J.,
RA Daviden T.M., Zafar N., White O., Tran B., Romero C., Forberger H.A.,
RA Weidman J.F., Khouri H.M., Feldblyum T.V., Utterback T.R.,
RA Van Aken S.E., Lovley D.R., Fraser C.M.;
RT "Genome of Geobacter sulfurreducens: metal reduction in subsurface
environments.";
RL Science 302:1967-1969(2003).
RR EMBL; AE017180; AAR33796.1; --
RS TIGR; GSU0464; --
DR InterPro: IPR002942; S4.
DR Pfam: PF01479; S4; 1.
DR SMART; SMO0363; S4; 1.
DR PROSITE; PS00889; S4; 1.
SQ SEQUENCE 71 AA; 7704 MW; 9C0D6C2C84E02AD9 CRC64;
Query Match 14.9%; Score 7; DB 2; Length 71;
Best Local Similarity 100.0%; Pred. No. 7.9;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 17 GECFVIE 23
Db 65 GECFVIE 71
RESULT 4
AAR33796
ID AAR33796 PRELIMINARY; PRT; 71 AA.
AC AAR33796;
DT 02-MAR-2004 (TrEMBLrel. 27, Created)
DT 02-MAR-2004 (TrEMBLrel. 27, Last sequence update)
DE 02-MAR-2004 (TrEMBLrel. 27, Last annotation update)
DE S4 domain protein.
DE GSU0464.
OS Geobacter sulfurreducens.
OC Bacteria; Proteobacteria; Deltaproteobacteria; Desulfuromonadales;
OC Geobacteraceae; Geobacter.
OX NCBI_TaxID=35554;
RN [1]
PN SEQUENCE FROM N.A.
RP STRAIN=PCA / ATCC 51573;
RX PubMed=14671304;
RA Methe B.A., Nelson K.E., Eisen J.A., Paulsen I.T., Nelson W.C.,
RA Heidelberg J.F., Wu D., Wu M., Ward N.L., Beanan M.J., Dodson R.J.,
RA Madupu R., Brinkac L.M., Daugherty S.C., DeBoy R.T., Durkin A.S.,
RA Winn M.L., Kolonay J.F., Sullivan S.A., Haft D.H., Selengut J.,
RA Daviden T.M., Zafar N., White O., Tran B., Romero C., Forberger H.A.,
RA Weidman J.F., Khouri H.M., Feldblyum T.V., Utterback T.R.,
RA Van Aken S.E., Lovley D.R., Fraser C.M.;
RT "Genome of Geobacter sulfurreducens: metal reduction in subsurface
environments.";
RL Science 302:1967-1969(2003).
RR EMBL; AE017208; AAR33796.1; --
RS TIGR; GSU0464; --
SQ SEQUENCE 71 AA; 7704 MW; 9C0D6C2C84E02AD9 CRC64;
Query Match 14.9%; Score 7; DB 2; Length 71;
Best Local Similarity 100.0%; Pred. No. 7.9;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 17 GECFVIE 23
Db 65 GECFVIE 71
RESULT 5
Q947L6
ID Q947L6 PRELIMINARY; PRT; 127 AA.
AC Q947L6;
DT 01-DEC-2001 (TrEMBLrel. 19, Created)
DT 01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
DE 01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
DE Glycine decarboxylase subunit T (Fragment).
GN Name-gdt;
OS Beta vulgaris (Sugar beet).
OC Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
OC Caryophyllales; Amaranthaceae; Beta.
OX NCBI_TaxID=161934;
RN [1]
PN SEQUENCE FROM N.A.
RP Schneider K., Weisshaar B., Borchardt D.C., Salamini F.;
RT "SNP frequency and allelic haplotype structure of Beta vulgaris
expressed genes.";
RL Mol. Breed. 8:63-74(2001).
DR EMBL; AF295647; AAL04443.1; --
DR GO; GO:0004047; F:aminomethyltransferase activity; IEA.
DR InterPro; IPR006222; GCV_T.
DR Pfam; PF01571; GCV_T; 1.
DR FT NON_TER 1 127
DR FT NON_TER 127 127
SQ SEQUENCE 127 AA; 13979 MW; 19B599611A064040 CRC64;
Query Match 14.9%; Score 7; DB 2; Length 127;
Best Local Similarity 100.0%; Pred. No. 13;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 5 CRDKDLA 11
Db 97 CRDKDLA 103
RESULT 6
RL5 METVA
ID RL5 METVA STANDARD; PRT; 181 AA.
AC P14029;
DT 01-JAN-1990 (Rel. 13, Created)
DT 01-JAN-1990 (Rel. 13, Last sequence update)
DT 01-OCT-2004 (Rel. 45, Last annotation update)
DE 50S ribosomal protein L5p.
GN Name=rpl5p;
OS Methanococcus vannielii.
OC Archaea; Euryarchaeota; Methanococci; Methanococcales;
OC Methanococcaceae; Methanococcus.
OX NCBI_TaxID=2187;
RN [1]
PN SEQUENCE FROM N.A.
RP MEDLINE=90040717; PubMed=2530355;
RX Auer J., Spicker G., Boeck A.;
RA "Organization and structure of the Methanococcus transcriptional unit
homologous to the Escherichia coli 'spectinomycin operon'.
RT Implications for the evolutionary relationship of 70 S and 80 S
ribosomes.";
RL J. Mol. Biol. 209:21-36(1989).
CC -!- FUNCTION: This is 1 of the proteins that binds and probably
CC mediates the attachment of the 5S RNA into the large ribosomal
CC subunit, where it forms part of the central protuberance. In the
CC 70S ribosome it contacts protein S13 of the 30S subunit (bridge
CC Bib), connecting the 2 subunits; this bridge is implicated in
CC subunit movement. May contact the P site tRNA; the 5S rRNA and
CC some of its associated proteins might help stabilize positioning

05-JUL-2004 (TrEMBLrel. 27, Created)
05-JUL-2004 (TrEMBLrel. 27, Last sequence update)
05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
S4 domain protein.
ORFNames=GSU0464;
OS Bacterium sulfurreducens.
OC Bacteria; Proteobacteria; Deltaproteobacteria; Desulfuromonadales;
OC Geobacteraceae; Geobacter.
OX NCBI_TaxID=35554;
RN [1]
PN SEQUENCE FROM N.A.
RP STRAIN=PCA / ATCC 51573;
RX PubMed=14671304; DOI=10.1126/science.1088727;
RA Methe B.A., Nelson K.E., Eisen J.A., Paulsen I.T., Nelson W.C.,
RA Heidelberg J.F., Wu D., Wu M., Ward N.L., Beanan M.J., Dodson R.J.,
RA Madupu R., Brinkac L.M., Daugherty S.C., DeBoy R.T., Durkin A.S.,
RA Winn M.L., Kolonay J.F., Sullivan S.A., Haft D.H., Selengut J.,
RA Daviden T.M., Zafar N., White O., Tran B., Romero C., Forberger H.A.,
RA Weidman J.F., Khouri H.M., Feldblyum T.V., Utterback T.R.,
RA Van Aken S.E., Lovley D.R., Fraser C.M.;
RT "Genome of Geobacter sulfurreducens: metal reduction in subsurface
environments.";
RL Science 302:1967-1969(2003).
RR EMBL; AE017180; AAR33796.1; --
RS TIGR; GSU0464; --
DR InterPro: IPR002942; S4.
DR Pfam: PF01479; S4; 1.
DR SMART; SMO0363; S4; 1.
DR PROSITE; PS00889; S4; 1.
SQ SEQUENCE 71 AA; 7704 MW; 9C0D6C2C84E02AD9 CRC64;
Query Match 14.9%; Score 7; DB 2; Length 71;
Best Local Similarity 100.0%; Pred. No. 7.9;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 17 GECFVIE 23
Db 65 GECFVIE 71
RESULT 4
ID AAR33796 PRELIMINARY; PRT; 71 AA.
AC AAR33796;
DT 02-MAR-2004 (TrEMBLrel. 27, Created)
DT 02-MAR-2004 (TrEMBLrel. 27, Last sequence update)
DE S4 domain protein.
DE S4 domain protein.
GN GSU0464.
OS Geobacter sulfurreducens.
OC Bacteria; Proteobacteria; Deltaproteobacteria; Desulfuromonadales;
OC Geobacteraceae; Geobacter.
OX NCBI_TaxID=35554;
RN [1]
PN SEQUENCE FROM N.A.
RP STRAIN=PCA / ATCC 51573;
RX PubMed=14671304;
RA Methe B.A., Nelson K.E., Eisen J.A., Paulsen I.T., Nelson W.C.,
RA Heidelberg J.F., Wu D., Wu M., Ward N.L., Beanan M.J., Dodson R.J.,
RA Madupu R., Brinkac L.M., Daugherty S.C., DeBoy R.T., Durkin A.S.,
RA Winn M.L., Kolonay J.F., Sullivan S.A., Haft D.H., Selengut J.,
RA Daviden T.M., Zafar N., White O., Tran B., Romero C., Forberger H.A.,
RA Weidman J., Khouri H.M., Feldblyum T.V., Utterback T.R.,
RA Van Aken S.E., Lovley D.R., Fraser C.M.;
RT "Genome of Geobacter sulfurreducens: metal reduction in subsurface
environments.";
RL Science 302:1967-1969(2003).
RR EMBL; AE017208; AAR33796.1; --
RS TIGR; GSU0464; --
SQ SEQUENCE 71 AA; 7704 MW; 9C0D6C2C84E02AD9 CRC64;
Query Match 14.9%; Score 7; DB 2; Length 71;
Best Local Similarity 100.0%; Pred. No. 7.9;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 17 GECFVIE 23
Db 65 GECFVIE 71
RESULT 5
ID Q947L6 PRELIMINARY; PRT; 127 AA.
AC Q947L6;
DT 01-DEC-2001 (TrEMBLrel. 19, Created)
DT 01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
DE Glycine decarboxylase subunit T (Fragment).
DE Glycine decarboxylase subunit T (Fragment).
GN Name-gdt;
OS Beta vulgaris (Sugar beet).
OC Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
OC Caryophyllales; Amaranthaceae; Beta.
OX NCBI_TaxID=161934;
RN [1]
PN SEQUENCE FROM N.A.
RP Schneider K., Weisshaar B., Borchardt D.C., Salamini F.;
RT "SNP frequency and allelic haplotype structure of Beta vulgaris
expressed genes.";
RL Mol. Breed. 8:63-74(2001).
DR EMBL; AF295647; AAL04443.1; --
DR GO; GO:0004047; F:aminomethyltransferase activity; IEA.
DR InterPro; IPR006222; GCV_T.
DR Pfam; PF01571; GCV_T; 1.
DR FT NON_TER 1 127
DR FT NON_TER 127 127
SQ SEQUENCE 127 AA; 13979 MW; 19B599611A064040 CRC64;
Query Match 14.9%; Score 7; DB 2; Length 127;
Best Local Similarity 100.0%; Pred. No. 13;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 5 CRDKDLA 11
Db 97 CRDKDLA 103
RESULT 6
ID RLS5 METVA STANDARD; PRT; 181 AA.
AC P14029;
DT 01-JAN-1990 (Rel. 13, Created)
DT 01-JAN-1990 (Rel. 13, Last sequence update)
DE 01-OCT-2004 (Rel. 45, Last annotation update)
DE 50S ribosomal protein L5p.
GN Name=rpl5p;
OS Methanococcus vannielii.
OC Archaea; Euryarchaeota; Methanococci; Methanococcales;
OC Methanococcaceae; Methanococcus.
OX NCBI_TaxID=2187;
RN [1]
PN SEQUENCE FROM N.A.
RP MEDLINE=90040717; PubMed=2530355;
RX Auer J., Spicker G., Boeck A.;
RA "Organization and structure of the Methanococcus transcriptional unit
homologous to the Escherichia coli 'spectinomycin operon'.
RT Implications for the evolutionary relationship of 70 S and 80 S
ribosomes.";
RL J. Mol. Biol. 209:21-36(1989).
CC -!- FUNCTION: This is 1 of the proteins that binds and probably
CC mediates the attachment of the 5S RNA into the large ribosomal
CC subunit, where it forms part of the central protuberance. In the
CC 70S ribosome it contacts protein S13 of the 30S subunit (bridge
CC Bib), connecting the 2 subunits; this bridge is implicated in
CC subunit movement. May contact the P site tRNA; the 5S rRNA and
CC some of its associated proteins might help stabilize positioning

DT	05-JUL-2004	(TrEMBLrel. 27, Last annotation update)
DE	Hypothetical protein OSUNBao078001.15.	
GN	ORFNames=OSUNBao078001.15;	
OS	Oryza sativa (japonica cultivar-group).	
OC	Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;	
OC	Euphorbiaceae; Magnoliophyta; Liliopsida; Poales; Poaceae;	
OC	Ehrhartoideae; Oryzaceae; Oryza.	
OC	NCBI_TaxID=39947;	
RN	[1]	
RP	SEQUENCE FROM N.A.	
RA	Buell C.R., Yuan Q., Quyang S., Liu J., Gansberger K., Kim M.M.,	
RA	Overton II L.L., Bera J.J., Tsirlin T., Krol M.I., Jarrahi B.B.,	
RA	Jin S.S., Koo H., Zismann V., Hsiao J., Blunt S., Vanaken S.S.,	
RA	Uterback T.T., Feldblum T.V., Yang Q.Q., Haas B.J., Suh B.B.,	
RA	Peterson J.J., Quackenbush J., White O., Salzberg S.L., Fraser C.M.,	
RL	Submitted (SEP-2000) to the EMBL/GenBank/DBJ databases.	
RN	[2]	
RP	SEQUENCE FROM N.A.	
RA	Buell R.;	
RL	Submitted (NOV-2003) to the EMBL/GenBank/DBJ databases.	
RN	[3]	
RP	SEQUENCE FROM N.A.	
RA	The Rice Chromosome 10 Sequencing Consortium;	
RA	"In-depth view of structure, activity, and evolution of rice	
RT	chromosome 10.;"	
RL	Science 300:1566-1569(2003).	
RN	[4]	
RP	SEQUENCE FROM N.A.	
RA	Buell C.R., Wing R.A., McCombie W.R., Messing J., Yuan Q.;	
RL	Submitted (MAY-2003) to the EMBL/GenBank/DBJ databases.	
RL	EMBL; AC079888; AAM93694.1; -.	
DR	EMBL; AE017109; AAP54466.1; -.	
DR	Gramene; Q8LNG9; -.	
DR	InterPro; IPR008975; Viral_cap_coat.	
DR	Hypothetical protein.	
KW	SEQUENCE 368 AA; 40524 MW; 2595A70161D151B CRC64;	
SQ		
Qy	25 LTGSHKH 31	
Ds	179 LTGSHKH 185	
RESULT 9		
ID	Q7QLJ6 PRELIMINARY; PRT; 401 AA.	
AC	Q7QLJ6;	
DT	01-MAR-2004 (TrEMBLrel. 26, Created)	
DT	01-MAR-2004 (TrEMBLrel. 26, Last sequence update)	
DT	01-MAR-2004 (TrEMBLrel. 26, Last annotation update)	
DE	AGCP8214 (fragment).	
GN	Name=agCG50549; ORFNames=ENSANG00000011967;	
OS	Anopheles gambiae str. PEST.	
OC	Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;	
OC	Neoptera; Endopterygota; Diptera; Nematocera; Culicoidea; Anopheles	
OX	NCBI_TaxID=180454;	
RN	[1]	
RP	SEQUENCE FROM N.A.	
RC	STRAIN=PEST;	
RA	Anopheles Genome Sequencing Consortium;	
RL	Submitted (MAR-2002) to the EMBL/GenBank/DBJ databases.	
CC	!- CAUTION: The sequence shown here is derived from an	
CC	EMBL/GenBank/DBJ whole genome shotgun (WGS) entry which is	
CC	preliminary data.	
CC	EMBL; AAA01008980; BAA14507.1; -.	
DR	InterPro; IPR003341; DUF139.	
DR	InterPro; IPR006209; EGF like.	
DR	Pfam; PF02363; C-triplex7.	
DR	PROSITE; PS01186; EGF 2; 3.	
FT	NON TER 1 1	

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CC of ribosome-bound tRNAs (By similarity).
CC -! SUBUNIT: Part of the 50S ribosomal subunit; contacts the 5S rRNA
CC and probably tRNA. Forms a bridge to the 30S subunit in the 70S
CC ribosome (By similarity).
CC -! SIMILARITY: Belongs to the L5P family of ribosomal proteins.
CC -----
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CC entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC or send an email to license@isb-sib.ch).
CC -----
CC EMBL; X16720; CAA34693.1; -.
CC PIR; S05617; R5MKX5.
CC HSP; P41201; 1MJT.
CC HAMAP; MF_01333; -.
CC InterPro; IPR002132; Ribosomal L5.
CC InterPro; IPR003236; Ribosomal_L5_mit.
CC Pfam; PF00281; Ribosomal_L5; 1.
CC Pfam; PF00673; Ribosomal_L5_C; 1.
CC ProDom; PD01076; Ribosomal_L5; 1.
CC ProDom; PD013434; Ribosomal_L5_mit; 1.
CC PROSITE; PS00358; RIBOSOMAL_L5; 1.
CC Ribosomal protein; RNA-binding; rRNA-binding; tRNA-binding.
CC KW SEQUENCE 181 AA; 20293 MW; 982486779041892C CRC64;
CC
CC Query Match 14.9%; Score 7; DB 1; Length 181;
CC Best Local Similarity 100.0%; Pred.No.18;
CC Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
CC
CC QY 21 VIETLTG 27
CC |||||
CC Db 39 VIETLTG 45
CC
CC RESULT 7
CC ID Q86DGS PRELIMINARY; PRT; 186 AA.
CC AC Q86DGS;
CC DT 01-JUN-2003 (TrEMBLrel. 24, Created)
CC DT 01-JUN-2003 (TrEMBLrel. 24, Last sequence update)
CC DT 01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
CC DT 01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
CC DE Putative gland protein GLIA06.
CC OS Heterodera glycyines (Soybean cyst nematode).
CC OC Eukaryota; Metazoa; Nematoda; Chromadorea; Tylenchida; Tylenchina;
CC OT Tylenchoidea; Heteroderidae; Heteroderinae; Heterodera.
CC OX NCBI_TaxID=51029;
CC RN [1]
CC RP SEQUENCE FROM N.A.
CC RX MEDLINE=2287455; PubMed=12906116;
CC RT Gao B., Allen R., Maier T., Davis E.L., Baum T.J., Hussey R.S.;
CC RT "The parasitome of the phytomematode Heterodera glycyines.";
CC RL Mol. Plant Microbe Interact. 16:720-726(2003).
CC DR EMBL; AF500015; AAP30754.1; -.
CC SQ SEQUENCE 186 AA; 19221 MW; A801E9CF13699E34 CRC64;
CC
CC Query Match 14.9%; Score 7; DB 2; Length 186;
CC Best Local Similarity 100.0%; Pred.No.18;
CC Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
CC
CC QY 25 LTGSHKH 31
CC |||||
CC Db 180 LTGSHKH 186
CC
CC RESULT 8
CC Q8LNG9 PRELIMINARY; PRT; 368 AA.
CC AC Q8LNG9
CC DT 01-OCT-2002 (TrEMBLrel. 22, Created)
CC DT 01-OCT-2002 (TrEMBLrel. 22, Last sequence update)

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SQ SEQUENCE 401 AA; 43118 MW; 9629287CAB405B77 CRC64;
Query Match
Best Local Similarity 14.9%; Score 7; DB 2; Length 401;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 32 CRCKEGY 38
Db 207 CRCKEGY 213

RESULT 10
GCST_MOUSE
ID GCST_MOUSE STANDARD; PRT; 403 AA.
AC Q8CF2;
DT 10-OCT-2003 (Rel. 42, Created)
DT 10-OCT-2003 (Rel. 42, Last sequence update)
DT 05-JUL-2004 (Rel. 44, Last annotation update)
DE Aminomethyltransferase, mitochondrial precursor (EC 2.1.2.10) (Glycine
cleavage system T protein) (GCVT).
GN Name=Ant;
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=12986/SvEvTac;
RX MEDLINE=22375501; PubMed=12487019;
RA Backofen B., Leeb T.;
RT "Genomic organization of the murine aminomethyltransferase gene
(Amt).";
RL DNA Seq. 13:179-183(2002).
CC -!- FUNCTION: The glycine cleavage system catalyzes the degradation of
glycine (By similarity).
CC -!- CATALYTIC ACTIVITY: Protein-S-aminomethyldihydropylylsine +
tetrahydrofolate = protein-dihydropylylsine + 5,10-
methylenetetrahydrofolate + NH(3).
CC -!- SUBUNIT: The glycine cleavage system is composed of four proteins:
P, T, L and H (By similarity).
CC -!- SUBCELLULAR LOCATION: Mitochondrial (By similarity).
CC -!- SIMILARITY: Belongs to the gcvT family.
CC
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CC
CC EMBL; AJ437692; CAD26917.1; -.
DR InterPro; IPR006223; GcvT.
DR InterPro; IPR006222; GCV_T.
DR Pfam; PF01571; GCV_T; 1.
DR TIGRFAMs; TIGR00528; gcvT; 1.
KW Aminotransferase; Mitochondrion; Transferase; Transit peptide.
FT TRANSIT 1 28 Mitochondrion (By similarity).
FT CHAIN 29 403 Aminomethyltransferase.
SQ SEQUENCE 403 AA; 44009 MW; 4FDECDC81492167 CRC64;
Query Match
Best Local Similarity 14.9%; Score 7; DB 1; Length 403;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 5 CRDKDLA 11
Db 148 CRDKDLA 154

RESULT 11
GCST_SOLTU
ID GCST_SOLTU STANDARD; PRT; 406 AA.
AC Q6C340;
DT 01-OCT-2004 (TEMBLrel. 28, Created)
DT 01-OCT-2004 (TEMBLrel. 28, Last sequence update)
DT 01-OCT-2004 (TEMBLrel. 28, Last annotation update)
DE Similar to sp|P48015 Saccharomyces cerevisiae YDR019c GCV1 glycine
decarboxylase.
GN ORFNames=YALI0F02849g;
OS Yarrowia lipolytica (Candida lipolytica).
OC Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes;
OC Saccharomycetales; Dipodascaceae; Yarrowia.
OX NCBI_TaxID=4952;
RN [1]
RP SEQUENCE FROM N.A.

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-----
CC EMBL; Z71184; CAA94902.1; -.
CC InterPro; IPR006223; Gcvt.
CC InterPro; IPR006222; GCV T.
CC Pfam; PF01571; GCV T; 1.
CC TIGRfams; TIGR00528; gcvT; 1.
CC Aminotransferase; Mitochondrion; Transferase; Transit peptide.
CC TRANSIT 1 29 Mitochondrion (Potential).
CC CHAIN 30 407 Aminomethyltransferase.
CC SEQUENCE 407 AA; 44279 MW; 7F1BE2896CDD1A59 CRC64;
-----
Query Match 14.9%; Score 7; DB 1; Length 407;
Best Local Similarity 100.0%; Pred. No. 36;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
-----
QY 5 CRDKOLA 11
Db 150 CRDKOLA 156
|||||
-----
RESULT 14
GCST_FLAPR
ID GCST_FLAPR STANDARD; PRT; 407 AA.
AC P49363; 1996 (Rel. 33, Created)
DT 01-FEB-1996 (Rel. 33, Last sequence update)
DT 01-FEB-1996 (Rel. 33, Last sequence update)
DT 05-JUL-2004 (Rel. 44, Last annotation update)
DE Aminomethyltransferase, mitochondrial precursor (EC 2.1.2.10) (Glycine
DE cleavage system T protein) (GCVT).
DE Name=GCST;
DE GN Flaveria pringlei.
DE OS Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
DE OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; asterids;
DE campanulids; Asterales; Asteraceae; Asteroideae; Tageteae; Flaveria.
DE NCBI_TaxID=4226;
DE [1]
RN SEQUENCE FROM NA.
RP TISSUE=Leaf;
RX MEDLINE=95284371; PubMed=7766903;
RA Kopriva S., Turner S.R., Rawsthorne S., Bauwe H.;
RT "T-protein of the glycine decarboxylase multienzyme complex: evidence
RT for partial similarity to formyltetrahydrofolate synthetase.";
RL Plant Mol. Biol. 27:1215-1220(1995).
CC -1- FUNCTION: The glycine cleavage system catalyzes the degradation of
CC glycine.
CC -1- CATALYTIC ACTIVITY: Protein-S-aminomethyl-dihydrolipoyllysine +
CC tetrahydrofolate = protein-dihydrolipoyllysine + 5,10-
CC methylenetetrahydrofolate + NH(3).
CC -1- SUBUNIT: The glycine cleavage system is composed of four proteins:
CC P, T, L and H.
CC -1- SUBCELLULAR LOCATION: Mitochondrial.
CC -1- SIMILARITY: Belongs to the gcvT family.
-----
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-----
CC EMBL; Z25858; CAA81077.1; -.
CC PIR; S56660; S56660.
CC InterPro; IPR006223; Gcvt.
CC InterPro; IPR006222; GCV T.
CC Pfam; PF01571; GCV T; 1.
CC TIGRfams; TIGR00528; gcvT; 1.
CC Aminotransferase; Mitochondrion; Transferase; Transit peptide.
CC TRANSIT 1 29 Mitochondrion (Potential).
CC CHAIN 30 407 Aminomethyltransferase.
CC SEQUENCE 407 AA; 44353 MW; 8BB7F7EB5679F7C0 CRC64;
-----

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Query Match 14.9%; Score 7; DB 1; Length 407;
Best Local Similarity 100.0%; Pred.No.36;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 5 CRDKDLA 11
| | | | |
Db 150 CRDKDLA 156

RESULT 15
GCST FLATR STANDARD; PRT; 407 AA.
AC O23936;
DT 15-JUL-1998 (Rel. 36, Created)
DT 15-JUL-1998 (Rel. 36, Last sequence update)
DT 01-OCT-2004 (Rel. 45, Last annotation update)
DE Aminomethyltransferase, mitochondrial precursor (EC 2.1.2.10) (Glycine
cleavage system T protein) (GCVT).
GN Name=GCST;
OS Flaveria trinervia (Clustered yellowtops).
OC Eukaryota; Viridiplantae; Streptophyta; Tracheophyta;
OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; asterids;
OC campanulids; Asterales; Asteraceae; Asteroideae; Tageteae; Flaveria.
OX NCBI_TaxID=4227;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Leaf;
RA Cossu R., Baume H.;
RT "The GCST gene encoding T-protein of the glycine cleavage system in
the C4 plant Flaveria trinervia.";
RL (er) Plant Gene Register PGR98-007.
CC -!- FUNCTION: The glycine cleavage system catalyzes the degradation of
glycine.
CC -!- CATALYTIC ACTIVITY: Protein-S-aminomethyldihydropolysine +
tetrahydrofolate = protein-dihydropolysine + 5,10-
methylenetetrahydrofolate + NH(3).
CC -!- SUBUNIT: The glycine cleavage system is composed of four proteins:
P. T. L and H.
CC -!- SUBCELLULAR LOCATION: Mitochondrial.
CC -!- SIMILARITY: Belongs to the gcvT family.

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DR EMBL; Z99769; CAB16917.1; -.
DR InterPro; IPR006223; GcvT.
DR InterPro; IPR006222; GCV_T.
DR Pfam; PF01571; GCV_T; 1.
DR TIGRFAMs; TIGR00528; gcvT; 1.
KW Amino transferase; Mitochondrion; Transfrase; Transit peptide.
FT TRANSIT 1 29 Mitochondrion (Potential).
FT CHAIN 30 407 Amino methyltransferase.
SQ SEQUENCE 407 AA; 44285 MW; 08E3DD9C329F9891 CRC64;

Query Match 14.9%; Score 7; DB 1; Length 407;
Best Local Similarity 100.0%; Pred.No.36;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 5 CRDKDLA 11
| | | | |
Db 150 CRDKDLA 156

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